

## **QUALITY CONTROL**

Quality in construction industry can be defined as the attainment of acceptable levels of performance from construction activities. The quality of any product or service is achieved when it conforms to the desired specifications.

Quality control in construction means making sure that things are done according to the plans, specifications and permit requirements. The quality assurance process checks the quality plan and quality control process to confirm that quality standards are implemented on the project site.

## **QUALITY STANDARD**

### **DURING CONSTRUCTION**

Quality control (QC) is the contractor's definition of how the project quality will be managed during construction of the project. ... It establishes a framework with defined procedures and practices to ensure that the completed product meets or exceeds the project specified quality requirements

ISO 9000 Quality Standards in Construction. There is risk involved in any construction project. A contractor's quality assurance system is essential in preventing problems and the reoccurrence of problems. ... Documentation of a quality system is scarce for the majority of the contractors.

### **AFTER CONSTRUCTION**

Quality control is branched from the quality management sector as the responsible party to ensure that products and facilities comply with requirements and established standards. The common way of controlling quality is the inspection of finished parts of a product.

## **DESTRUCTIVE METHOD**

Destructive Testing is defined as a software testing type to find points of failure in a software program. It is a testing method where an application is intentionally made to fail to check the robustness of the application and identify the point of failure.

Destructive testing or invasive testing is an investigative process whereby a property's components are taken apart, cut into or removed to assess damage caused by defective construction, such as removal of roofing components (roof tiles, roofing felt, sheathing), removal of stucco, coring concrete slabs,

It allows you to look at the items on a molecular level to determine the exact makeup of an object. There are a number of methods that produce different types of stress on the metal for comparison to known reactions of the different types of metal.

## **NON DESTRUCTIVE**

Non-destructive tests (NDT) are test methods which are used to examine the hardened concrete structure for their suitability for its intended use without interfering in any way with the integrity of the material or its suitability for service.

Non-destructive tests (NDT) are widely used and play an important role in engineering projects including newly constructed and existing structures. For new structures, applications are mainly quality control or the resolution of doubts about the quality of materials or construction.

## **MONITORING PROGRESS**

### **PROGRAMME & PROGRESS OF WORK.**

Definition of Progress Management. Generally, the progress management is defined differently depending on the aspects of cost engineering and scheduling, respectively

Monitoring of a program or intervention involves the collection of routine data that measures progress toward achieving program objectives. It is used to track changes in program outputs and performance over time. It provides regular feedback and early indications of progress (or lack of progress).

Here are just a few effective ways of tracking project progress as a project manager.

1. Create a Project Outline. Working with team members to create a project outline can be a great way of tracking project progress. ...
2. Establish Goals and Milestones. ...
3. Check in Regularly. ...
4. Ask How You Can Help. ...
5. Establish Clear Deadlines.

Progress Monitoring. Progress monitoring is used to assess students' academic performance, to quantify a student rate of improvement or responsiveness to instruction, and to evaluate the effectiveness of instruction.

## WORK STUDY

Project progress monitoring and control is one of the most important tasks of construction project management. Every team-member needs to know, in a timely and accurate manner, how is the project progressing, where they are currently in comparison to the initially set plans, whether deadlines are met, budgets are safely measured and followed. It is mainly the responsibility of the general contractor to update the Architect / Engineer, who, in turn, updates the owner. Figure 1 shows the traditional project progress monitoring process and the progress reports are updated on a periodic printed form; issued in most of the cases on a monthly basis. These reports discuss the current project progress with planned schedule of work in terms of time and budget to forecast the project finish date. These reports also mentioned the Constructability problems, quality issues including test results, Contract changes including modification in design and increase/decrease in quantities, pending issues from progress meetings. The photos are attached to these reports to show the achievement of milestones. This traditional construction management system provides a project manager with the various reports such as progress control, earned value management and resource management. Project manager spend most of his time for developing and updating of these reports instead of execution and to take in-time decision to finish the work within prescribed time scale

## ANALYSIS & CONTROL OF PHYSICAL & FINANCIAL PROGRESS CORRECTIVE MEASURES

Physical is the progress the project makes with respect to time resource or durations. And financial is the progress your project makes with respect to loaded resources/costs.

**Let's look at the five items you should be evaluating.**

1. Schedule. Project management success is often determined by whether or not you kept to the original timeline. ...
2. Quality. The end of a project phase is a good time for a quality review. ...
3. Cost. ...
4. Stakeholder Satisfaction. ...
5. Performance to Business Case.

## **SAFETY MANAGEMENT IN CONSTRUCTION**

Essentially, a safety management system for construction is a systematic way of identifying hazards and managing risks relating to the construction workplace. ...

Risk management procedures to keep risk from hazards down to acceptable levels (which may in some cases mean a level of zero)

### **IMPORTANCE OF SAFETY**

Serious injury or death is a risk when a construction worker climbs a ladder, works on a roof or works around cranes and other heavy equipment, safety is important. All of the workers on the construction site must work together to prevent injury and death.

Construction work is a hazardous land-based job. Some construction site jobs include: building houses, roads, tree forts, workplaces and repair and maintain infrastructures. This work includes many hazardous task and conditions such as working with height, excavation, noise, dust, power tools and equipment. The most common fatalities are caused by the fatal four: falls, being struck by an object, electrocutions, and being caught in between two objects. Construction work has been increasing in developing and undeveloped countries over the past few years. With an increase in this type of work occupational fatalities have increased. Occupational fatalities are individuals who die while on the job or performing work related tasks. Within the field of construction it is important to have safe construction sites.

Ways to prevent injuries and improve safety include:

- Management safety
- Integrate safety as a part of the job
- Create accountability at all levels
- Take safety into account during the project planning process
- Make sure the contractors are pre-qualified for safety
- Make sure the workers are properly trained in appropriate areas

- Have a fall protection system
- Prevent and address substance abuse to employees
- Review accidents and near misses, as well as regular inspections
- Innovative safety training, e.g. adoption of virtual reality in training
- Replace some of the works by robots (many workers may worry that this will decrease their employment rate)
- Adoption of BIM with three dimensional printing to make the building model first before put into real practice

## CAUSES & EFFECTS OF ACCIDENTS IN CONSTRUCTION WORKS

The Occupational Safety & Health Administration (OSHA) reports that there were 3,945 worker fatalities in private industry in 2012. Of that number, 775 or 19.6% were in construction. There are many causes of an accident on a construction site. The top causes of construction worker deaths on the job were falls, followed by struck by object, electrocution, and caught-in/between. These “Fatal Four” were responsible for nearly three out of five of the construction worker deaths.

Many accidents may be attributed to some type of negligence and may involve unsafe work site conditions, improper use of tools and-or equipment, and lack of protective safeguards.

Some examples of construction site accidents are more common than others. Below is a list of the more common ones starting with the Fatal Four.

1. **Falls.** Falls accounted for 278 out of 775 (36%) total deaths in construction in 2012, according to OSHA. An injury of this type may occur when a worker near an open-sided floor steps backwards or sideways without looking. Falling hazards also commonly occur on stairwells with no guardrails. Since high elevations often play a role in these falls, the results can be catastrophic to workers who sustain serious injuries. The main cause of death in construction occurs where inadequate or no fall protection is provided.
2. **Struck by object.** Seventy-eight construction workers died as a result of being struck by an object in 2012. A number of these deaths may have been prevented if the workers had undergone proper training and used equipment and machinery properly. Employees must remember to use parking brakes on nonmoving vehicles, reverse vehicle alarms, tool guards, personal protection equipment, debris nets, catch platforms and more.
3. **Electrocutions.** In 2012, 66 workers (9%) were seriously injured or killed by electrocution. Electrocution is when a person, tool or piece of equipment comes into contact with power lines or exposed electrical sources. Sometimes, these types of accident occur because workers are simply unaware of all energized power sources, from overhead and

underground power lines to damaged receptacles and connectors. As an example, a construction worker carrying a metal ladder may strike an overhead power line.

4. **Caught-in/between.** Although it seems obvious to never stand between a piece of heavy equipment and an immovable object, sometimes workers concentrating on their jobs find themselves in unexpected danger. Caught in/between accidents are when a worker's body part is caught, crushed, squeezed, compressed or pinched between two or more objects. Examples include cave-ins or collapsing materials, body parts caught in the moving parts of an unguarded piece of machinery, equipment rollovers and getting pinned between fixed objects, like a wall, and piece of heavy equipment.
5. **Slip and falls.** These are among the most common accidents on a construction site. These accidents may be linked to unsafe conditions including uncovered holes or trenches and exposed stakes.
6. **Ladder accidents.** This is one of the leading causes of injury and long-term disability. Most ladder accidents, including falls, happen because workers use the wrong type of ladder for their job or they set up the ladder improperly, perhaps on a slippery or unstable surface, and the ladder unexpectedly shifts or slips. Workers also may experience a foot slip, or they may lose their balance, or overreach. Ladders may also be defective or improperly maintained.
7. **Scaffolding accidents.** Despite strict regulations, scaffolding accidents occur. In a Bureau of Labor and Statistics (BLS) study, 72% of workers injured in scaffold accidents attributed the accident either to the planking or support giving way, or to the employee slipping or being struck by a falling object. In a general sense, most scaffolding accidents are caused by improper construction or negligent maintenance.
8. **Power tool and machinery accidents.** Power tool and machinery injuries may occur for reasons that include mechanical defects, electrical failure, inadequate training and failure or lack of proper safety equipment. A significant number of injuries are caused by the use of power tools and large equipment.
9. **Musculoskeletal disorders.** A leading cause of injuries, disability claims and medical costs in construction are sprains and strains of the muscles. Construction work can also cause injuries to the joints, bones, and nerves. These injuries often stem from job demands that constantly wear and tear on the body.
10. **Vehicle Accidents.** Dangerous construction site vehicles include forklifts, graders, backhoes and dump trucks. A common forklift accident occurs when the vehicle is turned or maneuvered with the load raised. Large trucks all too often back up and hit a pedestrian. Another hazard on construction sites is falling from a vehicle.

While construction sites may appear to be dangerous, many of these accidents can be avoided through common sense and protective measures. Prevention begins with adequate awareness and a properly maintained working environment that is safe and secure.

## **SAFETY MEASURES IN WORKSITE FOR EXCAVATORS**

To protect workers from injuries and fatalities, preventive measures should be implemented when workers begin excavating. According to OSHA, general safety measures to follow should cover the following:

1. Inspect trenches daily before work begins. Don't go near an unprotected trench.
2. Check weather conditions before work, be mindful of rain and storms.
3. Keep heavy equipment away from trench edges.
4. Be mindful of the location of utilities underground.
5. Always wear proper protective equipment.
6. Don't work beneath raised loads.
7. Conduct atmosphere tests. If low oxygen and toxic gases were detected, workers must not enter the trench.
8. Protective systems like benching, sloping, shoring and shielding must be created.
9. Planning and implementation of safety measures must be done by a competent person.
10. Use a checklist to perform regular self inspections.

## **SAFETY MEASURES IN WORKSITE FOR SCAFFOLDING**

Erect barricades to prevent individuals from walking under work platforms and place signs to warn those close by of the possible hazards. Maintain a minimum of 10 feet between the scaffold and any electrical hazard. Ensure all employees working on scaffolding have had proper training.

### **Scaffold Safety: 4 Common Hazards and How to Reduce Exposure**

In a Bureau of Labor and Statistics (BLS) study, 72% of workers injured in scaffold accidents attributed the accident either to the planking or support giving way, or to the employee slipping or being struck by a falling object. Scaffolds are integral to the construction industry with approximately 65% of the workforce involved in work from scaffolds. When used properly, scaffolds can save significant time and money. Though they are convenient and necessary, there are four major hazards associated with worker injuries that everyone needs to be aware of for proper scaffold safety.



## 4 Major Hazards: Scaffold Safety

### 1. Falls

Falls are attributed to the lack of guardrails, improper installation of guardrails and failure to use personal fall arrest systems when required. The OSHA standard requires fall protection must be used when work heights reach 10' or more. OSHA's standards represent the minimum level of protection; many general contractors require 100% fall protection at 6' or greater when working on scaffolds. These contractors are increasing safety margins by exceeding the minimum requirements of the OSHA standards.

Lack of proper access to the scaffold work platform is an additional reason for falls from scaffolds. Access in the form of a secured ladder, stair tower, ramp, etc. is required whenever there is 24" vertical change to an upper or lower level. The means of access must be determined before erection of the scaffold and employees are never allowed to climb on cross braces for either vertical or horizontal movement.

### 2. Scaffold collapse

The proper erection of a scaffold is essential in preventing this particular hazard. Before erecting the scaffold, a number of factors must be accounted for. The amount of weight the scaffold will be required to hold including the weight of the scaffold itself, materials, and workers must be considered. Foundation stability, placement of scaffold planks, distance from the scaffold to the work surface, and tie-in requirements are just a few of the other items that must be considered prior to building a scaffold.

#### Scaffold Competent Person

A knowledgeable individual who can perform preplanning will reduce the chances of injury and save money for any task. However, when building, moving, or dismantling a scaffold, a knowledgeable person, also known as the scaffold competent person, must be present. A competent person must also inspect the scaffold daily to ensure the structure remains in a safe condition. Improper construction can lead to a total collapse of the scaffold or falling components – both of which can be fatal.

### 3. Struck by falling materials

Workers on scaffolds are not the only ones exposed to scaffold related hazards. Many individuals have been injured or killed due to being struck by materials or tools that have fallen from scaffold platforms. These people must be protected from falling objects. OSHA requires that this is done one of two ways. The first is to install toe boards or netting on work platforms to prevent these items from falling to the ground or lower level work areas. The other option is to erect barricades that physically prevent individuals from walking under work platforms.

Caution or Danger tape is often used in an attempt to keep people away from overhead hazards but is often disregarded or taken down creating possible struck by hazards. A more robust system such as plastic mesh or wooden barricades is generally more effective and much easier to maintain. When members of the public could potentially move close enough to be struck by falling objects, creating barriers to prevent them from entering the area where objects can fall is a recognized best practice. Regardless of the type of falling object protection used, it is crucial that other individuals on the work site are aware of the overhead work.



#### 4. Electrocutation

Once again we look to preplanning and the competent person to assure there are no electrical hazards present during scaffold use. A minimum of 10' must be maintained between the scaffold and electrical hazards. If this distance cannot be maintained, then the hazard must be de-energized or properly insulated by the power company. Coordination between the power company and the company erecting / using the scaffold cannot be over stated.

Lastly, all employees who work on scaffolds must have documented training. The training topics must include identification and prevention of fall hazards, falling tools and materials hazards, and knowledge of electrical hazards.

##### Key Takeaways:

- Fall protection is required when work heights reach 10 feet or more.
  - Provide proper access to the scaffold and never allow employees to climb on cross braces for horizontal or vertical movement.
  - The scaffold competent person must be present when building, moving or dismantling the scaffold and must inspect it daily.
  - Erect barricades to prevent individuals from walking under work platforms and place signs to warn those close by of the possible hazards.
  - Maintain a minimum of 10 feet between the scaffold and any electrical hazard.
  - Ensure all employees working on scaffolding have had proper training.
- Scaffold safety starts from the ground up. Only safe work conditions and actions will prevent unnecessary injuries when working on these ever changing structures.

### SAFETY MEASURES IN WORKSITE FOR FORM WORK

Formwork used in the construction industry must be designed, fabricated, erected, supported, braced, and maintained so that it can support all vertical and horizontal loads that will be exerted. Here are the safety precautions to follow when dealing with formwork.

#### Equipment

Drawings or design plans should include all revisions for the jack layout, shoring equipment details, working decks, scaffolds, and all other related accessories. Once all those details are designed, shoring equipment must be inspected prior to erection to determine that the equipment meets the requirements specified in the formwork drawings. Do not use shoring equipment that is potentially damaged or shows signs of damage. All formwork shoring equipment must be inspected immediately prior to, during, and immediately after concrete placement. Inspect all components thoroughly and if you find weakened equipment, reinforce it immediately. It is extremely important to check that all base plates, shore heads, extension devices, and screws are firm and secured with the foundation and the form.

## Concrete

Formwork used and designed for cast-in-place concrete requires special considerations. Due to the significant weight that concrete adds to formwork and shoring equipment, it is important to check that eccentric loads are located over members that have been designed for such loading. If single-post shores are used one on top of another (tiered), then additional shoring requirements must be met. The shores must be:

- Designed by a qualified designer and the erected shoring must be inspected by an engineer qualified in structural design
- Vertically aligned
- Spliced to prevent misalignment
- Adequately braced in two mutually perpendicular directions at the splicing level

Adjustment of single-post shores to raise formwork must not be made after the placement of concrete. Reshoring must be erected, as the original forms and shores are removed, whenever the concrete is required to support loads in excess of its capacity.

## Cast-in-Place Concrete

Formwork used on cast-in-place operations needs to be carefully planned, designed, and inspected. Here is a list of guidelines and requirements for cast-in-place formwork:

- The form structure must be maintained within all design tolerances specified for plumpness during the jacking operation.
- The predetermined safe rate of lift must not be exceeded.
- All vertical slip forms must be provided with scaffolds or work platforms where employees must work or pass.
- Reinforcing steel for walls, piers, columns, and similar vertical structures must be adequately supported to prevent overturning and collapse.
- Employers must take measures to prevent unrolled wire mesh from recoiling. These measures may include, but are not limited to, securing each end of the roll or turning over the roll.

## Safety Guidelines

When it's time to remove formwork, follow these recommendations:

- Do not remove forms and shores (except those that are used for slabs on grade and slip forms) until the worker determines that the concrete has gained sufficient strength to support its weight and superimposed loads.

- Verify concrete strength information against construction drawings, specifications, and testing results. Testing must follow the American Society for Testing and Materials (ASTM) standard test method designed to determine the concrete compressive strength, and results must indicate that the concrete has gained sufficient strength to support its weight and superimposed loads.
- Read all your contract technical information covering the procedures on how and when to remove the formwork.

## SAFETY MEASURES IN WORKSITE FOR FABRICATION

Working in metal fabrication can sometimes require employees to engage in high-risk activities in order to properly perform their duties, including weld and manufacture ferrous materials. If you manage or are responsible for safety in a metal manufacturing facility, you know of the potential hazards that can befall workers. Every employee's reaction in any situation is largely dependent upon the adequacy of their training, the company culture, their state of mind and the working environment being as safe as possible. If you're looking to curb recurring incidents for your metal work and fabrication workers, here are four issues you should focus on.

### Lack of Guards and Other Protection

The working environment in any metal fabrication plant has to be as free from hazards as possible. All required guards have to be installed and functioning, the company housekeeping has to be stellar and all workers need to be provided with PPE that fits and is in good working order.

A company that doesn't invest in removing or mitigating existing hazards or providing protection against hazards that cannot be removed is failing its workforce. For some, investing in safety (guards, PPE, updated and safer equipment, etc.) might seem like an expensive requirement but, in the long run, it prevents injuries, loss of limbs or life and protects the employee as much as the employer. It also demonstrates the company's proactive approach to safety and concern for their workers' lives.

However, making an initial investment in guards and PPE is only the first step. These need to be inspected on a regular basis to ensure all guards are properly secured (including that there are no loose fittings and that they haven't been intentionally removed or altered). PPE should also be checked to see whether it's worn and can no longer provide adequate protection. Given the demands of the metal industry, even dedicated safety professionals can overlook this step—relying on checklists and setting a strict inspection schedule will make it easier to stay on top of equipment reviews.

## Insufficient or Inconsistent Training

Providing workers with general safety training at the start of their employment without committing to regular training updates and refreshers will likely fail to achieve desired compliance results.

Consistent safety training that engages employees on all aspects of metalworking safety is a must, from wearing safety gloves and welding helmets to the proper use of forging hammers and forklift operations. No subject is too small to discuss regularly. The goal is to help workers internalize safety practices and standards and accept the value of safety. It will also combat the natural process of forgetting and, hopefully, go a long way towards creating a safety dialog between employees and management, building a healthy safety culture and developing a feeling of a safety community.

One simple way to offer useful refreshers is through toolbox talks or short team meetings at the start of each shift. Supervisors leading these meetings should use personal stories workers can relate to or discuss current events in the news relating to metal safety. The idea is to raise common dangers with metal material handling, including discussing the best ways to avoid cuts, pinch points, amputations and crushes. If it goes well, workers will leave the talk more mindful of the workplace hazards they are exposed to.

## Compromised Safety Culture

It's difficult to implement a safety program without everyone in the organization doing their part. This extends from those on the floor to upper management and demands that they all take initiative. But to promote a reduced-risk environment, there must first be a trickle-down effect—and that requires strong and competent leadership.

Managers need to lead by example and never be exempt from following the rules or attending safety training. When workers see the company's commitment to safety, they will be more likely to follow the rules and willingly participate in safety initiatives.

A successful program must also instill a sense of accountability in workers and introduce a judgment-free way to comment on unsafe behavior and address employee concerns. Such a program will empower metal workers to initiate safety conversations, discover solutions, and cooperate with management to implement them.

## Employee Awareness and State of Mind

There is a direct correlation between human factors training and incident prevention. When employees exhibit personal awareness of their physical surroundings as well as their state of mind,

they are much less likely to be injured on the job. This is especially true in metal fabrication companies. Conversely, when employees feel rushed, frustrated, or fatigued, or if they've gotten used to taking shortcuts in order to complete their work, their chances of sustaining an injury increase substantially.

The problem with employee awareness and state of mind is that a lot of the materials in the metal fabrication industry require manual handling and the work conditions can be quite demanding. As a result, there are a number of lacerations, burns and other incidents. Additionally, due to the weight, size and bulk of the metals, workers experience back sprains and strains, and shoulder injuries.

These problems can be addressed not only by providing proper training, refresher sessions and good safety communication but also by introducing the concept of human factors. This can help workers address issues like rushing or frustration that often lead to injuries. It also helps them deal with complacency, which often makes metal workers lose focus, underestimate the amount of hazard involved in a task, and even chose not to use PPE or lifting machines when handling heavy loads.

Metal fabrication and manufacturing is one of the toughest industries to develop elevated standards of safety because the work occurring on the floor is very high-risk. It's crucial for companies to support employees by helping them develop safety communication skills, better situational awareness, and know when their state of mind may pose a risk to themselves or others. It's also why it's important for managers to initiate safety conversations (contributing to better safety awareness), nurture a positive safety culture and ensure working conditions are as free from hazards as possible.

## DEMOLITIONS

OSHA Compliance Safety and Health Officers often face a somber task as they identify and document the violation of safety and health standards which lead up to the latest worker tragedy. *Demolition worker impaled on rebar. Worker electrocuted during demolition work. Two demolition workers die of burns after flash fire at warehouse. Employee in aerial lift killed when roof collapses.* However, the hazards of demolition work can be controlled and eliminated with the proper planning, the right personal protective equipment, necessary training, and compliance with OSHA standards. This Safety & Health Topics page is dedicated to the demolition workers who died on the job.

Demolition is the dismantling, razing, destroying or wrecking of any building or structure or any part thereof. Demolition work involves many of the hazards associated with construction. However, demolition involves additional hazards due to unknown factors which makes demolition work particularly dangerous. These may include:

- Changes from the structure's design introduced during construction;

- Approved or unapproved modifications that altered the original design;
- Materials hidden within structural members, such as lead, asbestos, silica, and other chemicals or heavy metals requiring special material handling;
- Unknown strengths or weaknesses of construction materials, such as post-tensioned concrete;
- Hazards created by the demolition methods used.

To combat these, everyone at a demolition worksite must be fully aware of the hazards they may encounter and the safety precautions they must take to protect themselves and their employees.

Demolition hazards are addressed in **specific standards** for the construction industry.

## DEVELOPMENT OF SAFETY CONSCIOUSNESS

Safety consciousness may be defined as awareness of hazards and alertness to danger. This has a strong influence on the actions of an individual because of his desire to remain alive and uninjured. We need to develop safety consciousness and Make Safety a Value.

## SAFETY LEGISLATION WORKMAN'S COMPENSATION ACT

Employees or Worker's Compensation Act, 1923 is one of the most important social security law. The act's main aim is to provide financial protection and assistance to employees and their dependents through compensation in case of any accidental injury occurs during the course employment.

## CONTRACT LABOUR ACT

The Object of the Contract Labour Regulation and Abolition) Act, 1970 is to prevent exploitation of contract labour and also to introduce better conditions of work. A workman is deemed to be employed as Contract Labour when he is hired in connection with the work of an establishment by or through a Contractor.

Who is principal employer under contract Labour act?

In a factory, the owner or occupier or manager is considered a principal employer; but in an establishment or a company, the person who is in control and supervision of establishment or company will be the principal employer. Principal employer is the one who employs contract labour through a contractor

Applicability of the Act

It applies to any establishment in which twenty or more workmen are employed on any day of the of the accounting year as contract labour. It applies to any contractor who employs or who employed twenty or more workers on any day of the accounting year.

What is contract Labour Regulation and Abolition Act?

The Contract Labour (Regulation and Abolition) Act, 1970. Long Title: An Act to regulate the employment of contract labour in certain establishments and to provide for its abolition in certain circumstances and for matters connected therewith

Is Minimum Wages Act applicable to contract Labour?

The provisions of the Act are applicable to the contract labour if the employment in which they are engaged is duly covered by the Minimum Wages Act, 1948