International Labour Organization

Conducting Labour Inspections on Construction

A guide for labour inspectors

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Labour Administration
Labour Inspection
Occupational Safety and Health Branch

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PREFACE

The construction industry employs a large percentage of the workforce in both industrialized and developing countries. It is characterized by: the constantly changing nature of operations developed on construction sites; extended contracting chains with often blurred relationships between contractors, subcontractors and self-employed workers; multiple activities conducted by different firms simultaneously; an extensive use of migrant workers; manifest violations of labour rights; and the highly hazardous aspect of most of its operations. This sector is therefore a priority for Labour Inspectorates worldwide.

The employment relationship (the legal link between employers and workers) in construction activities is often unclear, and this regularly results in workers being denied access to certain rights and benefits. Combined with this, workers are often exposed to many hazards due to the inadequate provision of risk control measures.[1] Consequently, working conditions on many construction sites cannot be deemed "decent", since workers cannot be guaranteed a fair, just, safe and healthy working environment.

As defined under Article 3 of the ILO Labour Inspection Convention, 1947 (No. 81),[2] labour inspectors have a pivotal role to play in ensuring decent working conditions for workers in all sectors, including construction, by:

- Securing the enforcement of the legal provisions relating to conditions of work and the protection of workers while engaged in their work;
- Supplying technical information and advice to employers and workers concerning the most effective means of complying with the legal provisions; and
- Identifying defects or abuses not specifically covered by available legal provisions.

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[1] A "hazard" has the inherent potential to cause injury or damage to a person's health.

[2] See the ILO Labour Inspection Convention, 1947 (No.81), available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C081

This is achieved through inspections of construction sites, awareness-raising campaigns, and working together with employers' and workers' organizations – as well as other stakeholders.

The aim of this guide is to help labour inspectors fulfil their role by providing practical information, in a user-friendly format, on a suggested methodology for conducting inspections of construction activities. This methodology ranges from the planning of the inspection to the reporting of its findings, and provides technical information that labour inspectors can pass on to employers and workers, with a view to ensuring "decent work".

The guide details many of the working conditions that labour inspectors will address, namely the employment relationship, representation rights, salaries and wages, working hours and holidays, the employment of young persons and foreign nationals, and the hazards to which workers may be exposed. It also documents internationally recognized safety measures that will, if followed, reduce the likelihood of workers suffering from occupational accidents and diseases.

I trust that the guide will serve as a useful source of information for labour inspectors and other persons responsible for ensuring decent working conditions on construction sites.

Ms. Nancy Leppink
Branch Chief
Labour Administration, Labour Inspection
and Occupational Safety and Health Branch (LABADMIN/OSH),
Governance and Tripartism Department (GOVERNANCE)

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[3] http://www.nationalarchives.gov.uk/doc/open-government-licence/version/3/

Abbreviations

FOPS	falling object protective structure
ILO	International Labour Organization
LEGOSH	ILO Global Database on Occupational Safety and Health Legislation
MEWPs	mobile elevated working platforms
MCWPs	mast climbing working platforms
OSH	occupational safety and health
PPE	personal protective equipment
RCS	respirable crystalline silica
ROPS	roll over protective structures

1. Introduction

The ILO Safety and Health in Construction Convention, 1988 (No. 167)[1] states, in its Article 35 (b), that: "each Member shall… provide appropriate inspection services to supervise the application of the measures to be taken in pursuance of the Convention and provide these services with the resources necessary for the accomplishment of their task, or satisfy itself that appropriate inspection is carried out".

This guide is designed to equip labour inspectors with the necessary skills to carry out an effective inspection of working conditions in construction activities. Labour inspection covers many areas, depending on national legislation and circumstances. However, it is likely to include such topics as industrial relations and freedom of association, child labour, forced labour, wages and general conditions of work, occupational safety and health, and issues related to employment and social security.

It provides a suggested methodology for conducting an inspection of a construction activity – from the planning stage to reporting on the inspection itself. It is primarily aimed at giving guidance on the way to conduct proactive visits, as defined later in the text. Labour inspectors involved in reactive visits to determine the cause of an accident may wish to read the 2015 ILO publication entitled: *Investigation of Occupational Accidents and Diseases – A Practical Guide for Labour Inspectors.*[2]

Approximately one in six fatal accidents at work takes place in the construction sector, accounting for 60,000 fatal accidents per year. The intrinsically hazardous nature of the work – subcontracting or outsourcing practices, the multiple locations of construction sites, the changing work environment and high rates of staff turnover – all make construction a dangerous industry. The diversity of construction sites, along with differences in occupations, technology, and the tools and materials used, make safety and health management challenging. Yet, accidents and health problems can be prevented – and inspections carried out by labour inspectors play a vital role in achieving this.

Remembering that all workers have the right to a "safe and healthy working environment",[3] and – with regard to the safety of workplaces – that "all appropriate precautions shall be taken to ensure that all workplaces are safe and without risk of injury to the safety and health of workers",[4] the guide provides information on some of the common hazards found on construction sites and on control measures that, if adopted, will reduce the risks[5] to workers and others who may be affected by the work activities.

The risks of non-compliance with labour law are common in a sector that is characterized by extensive contracting chains, the temporary nature of worksites, the mobility and diversity of the workforce, and the changing nature of operations conducted on construction sites. Frequent violations reported include a failure to recognize labour contracts, to pay the minimum wage and other entitlements, to register workers in social security and to respect working hours; there are even cases of violations of fundamental rights at work, such as the minimum age for employment, forced and slave labour.

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[1] Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C167

[2] Available at: http://www.ilo.org/labadmin/info/pubs/WCMS_346714/lang--en/index.htm

[3] See the ILO Promotional Framework for Occupational Safety and Health Convention, 2006 (No.187), Article 3 (2), available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C187

[4] See Convention No. 167, Article 13.

[5] Risk is the chance, high or low, that somebody could be harmed by a hazard, together with an indication of how serious the harm could be.

2. Knowledge and skills required by labour inspectors

Labour inspectors are empowered to ensure compliance with national legislation, and it is therefore vital that they be fully conversant with this legislation and the scope of their authority.[6] Given the international diversity in legislation, it is only possible to provide illustrative examples in this guide.[7]

Such powers are likely to include, inter alia, the right to: enter premises without prior notice; conduct examinations to ensure that the relevant legal provisions are being observed; question witnesses; examine and collect documentary information; collect materials for testing; and take enforcement action (require duty holders to take action, including with immediate effect in the event of imminent danger to workers' safety or health, and to impose sanctions).

Labour inspectors inspecting construction sites must be familiar with the Inspectorate's internal procedures and practices (systems of work). These may vary but could cover, amongst other matters: the composition of inspection teams (for example, the need for inspectors with specific competencies – such as civil engineers); collaboration with other agencies; the provision and use of personal protective equipment (PPE); the involvement of workers' and employers' representatives during inspections; the Labour Inspectorate's ethical code;[8] principles for taking enforcement decisions[9] (sanctioning), i.e. policies to address non-compliance with legislation; practices for reporting on inspections; and the communication of findings.

In their attempt to promote decent work and a culture of accident prevention, labour inspectors would be greatly assisted in their task by having a knowledge of the stakeholders in the construction industry and of the way in which they are focusing on ensuring decent working conditions; it would also be relevant to examine how the stakeholders' behaviour is being driven with regards to working conditions – including occupational safety and health (OSH).

When conducting an inspection of construction sites, labour inspectors must be conversant with the sector and have a sound knowledge of: the work organization and management of a typical construction project and site; the challenges faced by all those involved in the construction project – i.e. all those with potential legal responsibilities such as the clients, the principal contractor, subcontractors and workers; and the national and internationally recognized safe working practices in the sector.

In order to conduct effective inspections on construction sites, labour inspectors will also need the following skills:

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[6] Labour inspectors' powers are determined by Article 12 of the Labour Inspection Convention, 1947 (No. 81), available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C081

[7] Readers may be interested in the *ILO Global Database on Occupational Safety and Health Legislation (LEGOSH)*, which provides a picture of the regulatory framework of the main elements of OSH legislation, including OSH management and administration, employers' duties and obligations, workers' rights and duties, and OSH inspection and enforcement. This database may be found at: http://www.ilo.org/dyn/legosh/en/f?p=14100:1:0::NO

[8] International Association of Labour Inspection (IALI): *The Global Code of Integrity for Labour Inspection*, available at: http://www.iali-aiit.org/resources/code-of-integrity.pdf

[9] The Enforcement Management Model is a framework that helps inspectors to make enforcement decisions in line with the Health and Safety Executive's (HSE's) Enforcement Policy Statement (EPS), available at: www.hse.gov.uk/enforce/emm.pdf

- Soft skills – the ability to interact effectively with workers, employers and their representatives, as well as other inspectors, and to communicate the findings of the inspection to a wide variety of individuals and organizations;
- Interviewing skills – the ability to draw out information through effective questioning;
- Hazard recognition – the ability to identify hazardous working situations to ensure that actions are taken to guarantee not only the workers' safety but also that of the labour inspectors;
- Technical competence – the awareness of safe working procedures that should be adopted, with particular relevance to the work activities being inspected;
- Organizational skills – the ability to plan inspections, and to record and organize the information obtained;
- Analytical skills – the ability to assess the way in which the construction site and the contracting chain are organized and the workforce is distributed, and to identify the employers, and the contractual arrangements between contractors and subcontractors, which affect management and coordination on site; and
- Legal competence – a knowledge of the legislation applicable to the employment relationship, working conditions and OSH, and to any other area covered by the mandate of the Labour Inspectorate.

These skills will enable inspectors to identify compliance (and conversely non-compliance) with national legislation and – where applicable – collective bargaining agreements, and to determine actions to be taken.

2.1 The construction cycle

Labour inspectors in the construction sector need to have an understanding of the construction cycle as national legislation may place duties on stakeholders at different stages of the cycle and/or throughout the cycle. For instance, planners may have to consider separation distances between manufacturing premises and domestic dwellings, and architects may have to consider how the façade of the building will be cleaned or design a safe access to plant that is located on the roof, etc.

The construction cycle is generally made up of five stages:

Stage 1: Planning – includes determining whether the clients' demands are permissible and feasible;

Stage 2: Design[10] – includes drawings and specifications of the project and anticipated costs;

[10] Stages 1 and 2 are vitally important to ensure safe working conditions on the construction site. As stated under Article 9 of Convention No. 167: "Those concerned with the design and planning of a construction project shall take into account the safety and health of the construction workers in accordance with national laws, regulations and practice". Many accidents occur because OSH was not taken into consideration at the design phase of the project. Because of this, many labour inspectors start their work by meeting with the owners and main contractors before the work on site starts, to assess the adequacy of the planned operations in terms of safety and health and to determine any measures that have to be taken at this stage. The importance of the planning phase is, for example, stated in the *Preamble of the EU Council Directive 92/57/EEC*: "…unsatisfactory architectural and/or organizational options or poor planning of the works at the project preparation stage have played a role in more than half of the occupational accidents occurring on construction sites in the Community".

Stage 3: Tendering – includes providing details of plans and asking companies to submit proposals, leading to the selection of the main contractor;

Stage 4: The construction process itself. This includes:

Phase I: Site work

Phase II: Foundations

Phase III: Superstructure

Phase IV: Façade

Phase V: Interior construction

Phase VI: Commissioning

Phase VII: Grading, improvements, and landscaping;

Stage 5: Handover and evaluation upon completion. The building is handed over to the client who may evaluate the quality of construction and services provided.

When planning the inspection visit and topics to be covered during this process, labour inspectors will need to know what stage or phase of the construction cycle the project has reached. For instance, if inspectors are planning to inspect work at height, they may wish to visit the site at phases III and IV of the cycle; if they wish to inspect mobile plant activities, phases I and II might be more appropriate; and it they wish to ensure that there is no child labour or that all workers are declared or receiving their correct wage, they may prefer to visit during phases V or VII – as this is the time when more workers may be required to be on site.

Preferably, each site should be supervised at an early stage so that inspectors are properly informed of the enterprises that will conduct the work, the number of workers involved, and the way in which the safety and health of workers is planned, ensured and coordinated. Visits should then take place during critical moments in terms of operations being conducted, and the number of enterprises and workers on site.

3. The inspection process

There are four main stages of the inspection process:

1. **Planning/preparation of the inspection.**
2. **Conducting the inspection.**
3. **Determining action to be taken.**
4. **Reporting on the inspection.**

3.1 Planning/preparation of the inspection

A proper planning of the inspection is crucial. If it falls short, the inspection itself is unlikely to be effective – and may indeed be counter-effective. Labour inspectors are responsible for ensuring compliance with national legislation. An adequate preparation will ensure that all relevant matters are considered, thereby promoting compliance and consequently an improvement in working conditions. This preparation may involve the mapping of all actors who may be on site, as they might have important information to clarify how the site is organized or provide information on factors liable to affect compliance. These actors will include: the client; the main contractors; the subcontractors; the project managers; the authorities that grant permits; the suppliers; the service providers (for example, security, catering); and the workers.

When planning the inspection, consideration must be given as to whether other authorities should accompany the labour inspectors during the planned visit. These might include: the tax authority; the police; other Inspectorates – such as Labour Relations and Social Security Inspectorates; environmental inspectors; and building control inspectors. The topics to be covered during the inspection and any previous information about the site will have a bearing on whether other agencies will accompany the labour inspectors. When joint inspections are to be conducted with other agencies, it is vital that each agency be involved in the planning process and that all organizations are clear as to the objectives of the visit, the roles of each institution, the methodologies used, the person or body that takes the lead, and the way in which information will be shared and reported.

The planning process may be broken down into various stages.

3.1.1 Identification of the topics to be covered by the inspection.

These topics may include, for instance, child labour, hours of work, payment of wages, undeclared work, and occupational safety and health. The Inspectorate's objectives, contained in its inspection plan, will normally define the topics to be covered during all inspections, the specific topics to be taken into account in sectorial inspections, and the types of proactive inspections that will be conducted.

These objectives will help to establish when a visit should be carried out. For example, if the Inspectorate is planning to address undeclared work, it will be more beneficial to visit the worksite when the highest number of workers are likely to be present or when subcontracting is at its peak. On a construction site, this is most probable after the completion of the groundworks and – potentially – the structural works. However, if one objective is to reduce occupational accidents on construction sites during excavations, inspections would have to be carried out soon after the site becomes active.

3.1.2 Identification of the premises to be inspected and the timing (when)

The selection of enterprises will be contingent upon whether the premises are registered – and therefore known to the authorities. When deciding which premises to visit, Inspectorates may also take into account the number of workers employed, the history of the firm's working conditions, its geographical location, and inspectoral knowledge of unregistered premises.

One of the challenges for Inspectorates tasked with the inspection of construction activities is that they are sometimes unaware of a specific worksite's existence. In some countries national legislation requires[11] that before starting construction, the owner/clients of the future construction site must inform the authorities in writing (providing specific information)[12] that work is due to start. This obligation is particularly useful for the Inspectorate; it is not only informed of a work activity but can also identify time frames for conducting the inspection. In other countries, Labour Inspectorates screen the regions to look for construction sites before they plan visiting schedules. Visits will then be made primarily to sites that were spotted by labour inspectors but were unknown to the Inspectorate, as non-compliance with legislation may be more prevalent at these sites.

3.1.3 Identification of the type of visit to be made

Labour inspectors' visits are either **proactive** (inspections) or **reactive** (investigations); in both cases, these visits can either be announced, when the persons in control of the workplace have been forewarned that an inspection will be carried out on a specific day/time, or unannounced, when no warning is given to those in charge of the site.[13]

The main advantage of announced visits is that the enterprise has time to ensure that all the necessary documents are available and that senior management will be present. Conversely the main disadvantages are that the enterprise has time to correct any non-compliance issues, remove any documents or workers that they do not wish the labour inspectors to see – and management may be "unexpectedly" called away. Workers may also believe that labour inspectors are not seeing the enterprise's real/normal working conditions and that, by giving an advance warning to employers, they are not impartial. The main advantage of unannounced visits is that labour inspectors see working conditions as they really are, including the actual numbers of workers on site, even the ones who are not declared. Depending on the objectives of the inspection visit, announcing it beforehand might therefore undermine its success.

There is nevertheless an argument for both announced and non-announced proactive and reactive visits, and much depends on the issues that are being inspected.

Proactive visits generally fall into the following categories:

i) **Routine visits** (planned, regular, standard, preventive) may be part of a predetermined plan and labour inspectors will ensure that employers and workers are complying with the law. The inspectors will also provide advice on how compliance can be improved. Given the wide range of legislation that labour inspectors are empowered to enforce and/or the size of the worksite or other resource constraints, they may be unable to conduct an inspection that covers the whole worksite or all aspects of the legislation. But this must not be interpreted as implying that labour inspectors condone non-compliant activities they have not inspected – and this matter must be made clear to those with the duty to comply with the legislation.

ii) **Follow-up visits** are generally conducted after routine visits, with a view to verifying the implementation of measures that the inspector has requested to ensure compliance with the law. There is generally no predetermined time frame for these follow-up visits; the measures required by the inspector will determine the time frame for this visit.

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[11] European Union: *Council Directive 92/57/EEC of 24 June 1992 on the implementation of minimum safety and health requirements at temporary or mobile construction sites.*

[12] To view an example of a form for the notification of a construction project in the United Kingdom, see: https://www.hse.gov.uk/forms/notification/f10.htm; and one from Spain: http://www.madrid.org/ICMdownload/MDCJYDL.pdf

[13] "Labour inspectors… shall be empowered… to enter freely and without previous notice at any hour of the day or night any workplace liable to inspection", Article 12 (1) (a) of Convention No. 81.

iii) **Special visits** may be part of a national or regional/local programme geared to specific activities, such as verifying the minimum wage, combating forced or child labour, ensuring the safe operation of workplace transport.

iv) **Blitz visits** generally occur when labour inspectors target either a specific region/location or a particular topic within a concentrated time period. These visits are aimed at having a maximum impact and are often used for monitoring undeclared work, or as part of a safety and health campaign. On many occasions, blitz visits are conducted with other authorities. Many Inspectorates will publicize the action they have taken during these visits to help further the campaign's impact.

Reactive visits generally fall into the following category:

Investigative visits. These may be investigations into occupational accidents or diseases, or complaints received – generally from workers with regard to their working conditions.

3.1.4 Preparation of the inspection visit

Once the Inspectorates/labour inspectors have identified the topics to be covered during the inspection and the worksites to be inspected, they will need to plan for the actual visit.

The level of planning will depend on the topics that are to be covered, however labour inspectors will need to obtain and/or review:

- The Inspectorate's records for the enterprises/premises to be inspected, as this will inform their decisions with regard to any action they may wish to take. For example, if the employer has been given previous advice on a particular issue and has taken no or limited action to improve compliance, then it may be more appropriate for the labour inspectors to take enforcement action/implement sanctions to ensure compliance. These records will also most probably provide the inspector with information on the number of workers, the size of the worksite, the work activities likely to be present, and the employers' and workers' attitude with regard to the Inspectorate, labour inspectors and compliance with legislation;
- Copies of the relevant national legislation on the topics to be covered, to be consulted in case of doubt. It might also be advisable to have a copy of any collective agreement (sector or enterprise) applicable to the employers and workers present on the site;
- The plan of any premises to be inspected (if available). This may be useful on construction sites to help examine traffic flows and to identify services above or below ground (gas, electricity and water);
- The work plan applicable to the construction site, with a calendar of activities. In countries where safety plans are compulsory, labour inspectors are advised to consult these documents as they should provide all relevant information on how the main contractor prepared operations with a view to keeping them safe;
- Any available promotional material on the topics to be covered during the inspection. This material, not only serves as an important resource for the inspector, but also leaving it with the employers and workers helps towards providing momentum to improve conditions following inspections;
- Any documentation required by the Inspectorate's policies and procedures. This may include documentation to be completed by the labour inspectors (visit reports) or information that has to be presented to employers and workers. It may also provide general information about what to expect from the inspector

and/or a description of their powers, etc. This type of leaflet[14] is useful to all concerned; for instance, if the labour inspectors encounter difficulties when trying to enter the premises, they may refer to the leaflet as it will provide official evidence of their right to entry to those who may be obstructing them;

- Any guidance from the Inspectorates that relates to the topics to be covered. This may be in the form of a checklist on matters to be inspected and/or may provide information to labour inspectors on action they might be expected to take in specific situations. For example, the Health and Safety Executive (HSE) in the United Kingdom provides its inspectors – and makes available to the general public – *Topic Inspection Packs*, which describe and support the inspection of various topics.[15] The protocols and guides used by the Spanish Labour and Social Security Inspectorate are another example, and they are available on the institution's web page.[16]

In addition to obtaining the above information, labour inspectors may also draw up a plan for the inspection (this information is not exhaustive).

Table 3.1 An example of an inspection plan for a construction site

Inspection plan	
Construction site to be inspected/location.	
Inspection to be conducted: date and time.	
Resource requirement (number of personnel and specific competencies).	
Joint inspection with other agencies? If so, identification of agencies and personnel.	
Transport to site via?	
Inspectorate's records of duty holders expected to be on site. Do these records include instructions on action to be taken by the duty holder following previous inspection/s? If yes, make a record of matters to be verified.	
Topics to be covered (for example): 1) OSH and working conditions; 2) Full aspects of OSH or specific topics (work at height, transport, groundwork, etc.); 3) Full working conditions or specific topics (contracts, wages,working hours, etc.).	
Type of inspection? For instance: Pre-work inspection to discuss how the client will operate/manage the site; Site inspection of actual working conditions.	
National legislation/technical standards with regard to topics to be covered, and information obtained.	
With regard to the topics to be covered, obtain relevant Inspectorate policy and procedures or other guidance material for labour inspectors.	
With regard to the topics to be covered, identify what documentation will need to checked on site, i.e. labour contracts, payment of salaries/wage slips, time sheets/hours of work, safety plans, accident records, etc.	
etc.	

[14] *What to expect when a health and safety inspector calls: A brief guide for businesses, employees and their representatives* (HSE, United Kingdom), available at: http://www.hse.gov.uk/pubns/hsc14.pdf

[15] *Topic Inspection Packs* (English) (HSE, United Kingdom), available at: http://www.hse.gov.uk/foi/internalops/fod/inspect/index.htm

[16] http://www.empleo.gob.es/itss/web/Atencion_al_Ciudadano/Normativa/RIESGOS_LABORAL/index.html

In addition to the above materials and documents, labour inspectors will need to ensure that they have the following before they leave their office:

- Official identification card or warrant verifying their credentials;
- Notebooks and writing materials to record information;
- Camera with still and possibly video capability to record documents and conditions found (consider taking extra batteries and memory card/films);
- Personal protective equipment (PPE), such as a hard hat, protective footwear with steel toe caps and steel mid-soles, high visibility clothing, suitable outdoor clothing to protect against the weather, eye protection, ear protection and hand protection;
- The necessary legal paperwork. This will depend on the national legislation but may include stop/prohibition notices, improvement notices, statement forms, workers' identification forms, questionnaires for determining the employment relationship, means to record and tag evidence;
- Mobile phone, as it may be necessary to communicate with other labour inspectors in the team, the Inspectorate or the police – either on account of the labour inspector's own personal safety or matters related to being obstructed in the course or his or her duties. It may also be useful for obtaining additional information on enterprises and workers in the Inspectorate's databases, if these are not accessible at the site, or receiving advice and authorization with regards to taking enforcement action; and
- Measuring equipment and torch/flashlight.

3.2 Conducting the inspection

3.2.1 Arrival at site

When labour inspectors arrive at a construction site, they are well advised to spend some time considering the site conditions and observing work activities before they enter the premises. This is especially important when conducting occupational safety and health (OSH) inspections as systems of work may change when employers and workers are aware that an inspection is being carried out – and undeclared workers may disappear when the inspectors enter the site. It may be useful for labour inspectors to photograph/video systems of work that are visible, as these can be discussed during the inspection and may also be required to support any action decided upon.

When studying the site, labour inspectors may see safety signs regarding the need for personal protective equipment (PPE).

Figure 1. Example of safety signs depicting the required PPE.

By examining the signs, labour inspectors will be able to identify the PPE that persons on the site are supposed to wear. Even if there are no safety signs, the labour inspectors should themselves wear the standard PPE required on construction sites. This PPE includes a hard hat, protective footwear and a high visibility vest **and** should be supplied to the inspector by the Inspectorate at no cost.[17]

[17] ILO Occupational Safety and Health Convention, 1981 (No. 155), Article 16 (3), available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C155

Any person accompanying the inspector (e.g. officers from other organizations) must also wear the appropriate PPE.

Whilst conducting initial observations, labour inspectors may also be able to identify where site visitors are received and thus where they need to go. Although labour inspectors will be wearing the appropriate PPE, they should not wander through the site unaccompanied as they will be unaware of the planned work activities and may place themselves in danger.

Labour inspectors may be able to ascertain whether the wearing of PPE is enforced or not. If the site management is putting up signs, it shows that it is aware of the preventive measures required to reduce the risks to workers. However, if it is not enforcing the wearing of PPE, it gives an indication as to its commitment with regards the management of OSH issues.

When recording systems of work, both before and during the visit, the labour inspectors should – whenever possible – record (photograph and document) both unsafe and safe systems of work. Many sites have several contractors, some of whom will comply with safety standards and others who will not. By making recordings of the work systems, labour inspectors will be able to question those in control of the site and/or specific work activities as to why differing systems are being allowed and/or used.

After making their preliminary observations, labour inspectors will now be ready to enter the site. Some construction sites will have security, and labour inspectors will present themselves to the security personnel, showing their warrants/formal identification, and request to see those in control of the site; this may be the principal contractor, the site owner etc. In some instances the security personnel may try to prohibit labour inspectors from entering the site. Labour inspectors should explain their legal prerogative to enter the site without prior notice.[18] Any refusal to allow the labour inspectors to visit constitutes an obstruction and should be sanctioned in accordance with the national legislation.[19] If national conditions so allow, labour inspectors may obtain assistance from the police to enter the site. Once inside, those in charge of the construction site should be informed of the obstruction and the measures that will be taken as a consequence (in some countries, obstruction is a criminal offence). Support from the police may also be required to protect the inspectors' security.

Having gained access to the site, labour inspectors will normally conduct an opening meeting with those in control of the site – the employers or their representatives (site management) – to clarify the purpose of their visit, listing the topics they wish to cover and explaining how they propose to proceed. It is important at this meeting to advise those present if the whole site or a sample of the site will be inspected. But this does not imply that the work activities or parts of the site that have not been inspected are deemed to be in compliance with national legislation; it is the responsibility of those with legal duties – e.g., the clients, direct employers, main contractors and sub-contractors – to comply with national legislation. If safety coordinators are required under national legislation, they should also attend the meeting.

The labour inspector will also want to advise those present that they will/may need to speak to workers or their representatives without other persons being present. It is incumbent upon the labour inspector to determine how the inspection will be conducted and to lead the visit, in accordance with any existing Inspectorate and national guidelines.

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[18] Convention No. 81, Article 12.

[19] Idem, Article 18.

Labour inspectors may also begin their visit by analysing the health and safety plan, together with the health and safety coordinators or person in charge, to gain an understanding of how hazards are being addressed on site, before they move on to the actual inspection of working practices to confirm their findings. They will look into how safety and health is managed, and determine whether allocated resources are timely and appropriate.

Labour inspectors may also seek detailed information on all the contractors and subcontractors on site, the contractual relations between them, and the workers involved. Particularly when they are monitoring compliance with employment and social security legislation, they will ask for a list of all workers present on site on the day of the inspection, with a confirmation of their identification (legal papers) and details on their type of contract, professional category, and date of admission to work, working hours, and wages. This information will then be checked against the statements of workers on site, and documents such as labour contracts, social security registration and payslips.

3.3 Matters to be addressed during the OSH aspects of the inspection

This section covers matters that labour inspectors may wish to address during an OSH inspection of the site. At the outset, it must be stated that the matters discussed here below do not constitute an exhaustive list of all the activities that could be inspected, or of the hazards and safe systems of work that could be covered during an inspection.

National legislation may place duties on employers or others in control of worksites to ensure that certain documentation (with reference to OSH) is present and up to date. It would be impossible to list all the documentation required by national legislation; however, there may be a requirement for some or all of the following (in no particular order):

- Documented safety and health policy;
- Notice to the authorities providing information with regards to the construction project;
- Site plans;
- Site operating hours;
- Safety and health plans;
- Employee work records; e.g. contracts, contact details, hours of work, training records;
- Method statements covering work activities;
- Risk assessments;
- Accident and occupational disease records;
- Scaffold registry covering erection and inspection;
- Records of management site safety inspections;
- Minutes of site safety and health committee meetings;
- Minutes of site planning meetings;
- Equipment manuals/maintenance records/examination records;

- Safety data sheets of hazardous chemicals in use;
- Social or other insurance coverage – including work injury insurance; and
- Medical aptitude certificates of workers.

Labour inspectors may wish to examine these documents and ascertain whether, for example:

1. The method statements covering the work activities are actually being followed;
2. The control measures that have been identified as required in the risk assessments have been implemented;
3. The accident and occupational disease records/investigation reports are used to help identify appropriate risk control measures to prevent recurrences;
4. Workers have been trained in areas related to existing hazards and preventive measures; and
5. Consideration has been given to the coordination of work activities and OSH management between all contractors present on site, with respect to work activities and OSH management.[20] For instance, has it been ascertained who has the overall responsibility for OSH on site, and who determines site safety rules – such as speed limits, PPE requirements, and the documentation required for plant entering site?

If the above matters are not being addressed, this might imply that there is no active OSH management system at the site and action will need to be taken. Any steps taken by the inspectors to ensure that these issues are taken into account will be contingent upon the level of non-compliance with national legislation, the level of risk and the respective Labour Inspectorate policies.

During the visit the inspectors will have to appraise the working practices that are being followed. This may be done before or after examining the paperwork required under national legislation. Nonetheless, in the event that the inspectors have already observed a defect in the plant, layout or working methods, which they have reasonable cause to believe constitutes an immediate threat to the workers' safety or health, it would be inappropriate to start examining the paperwork. Upon observing these defects, the inspectors should first take the steps they are empowered to take to remedy the defect,[21] thereby ensuring the workers' safety and health before they turn to the paperwork.

3.3.1 The control of risks on construction sites

All employers in the contracting chain should establish a coordinated occupational safety and health management system. While employers remain responsible for the application of the adequate OSH risk control measures for workers dependent upon them, the main contractor or person with control over or primary responsibility for the overall construction site should ensure coordination of all enterprises and self-employed persons on site.[22]

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[20] Convention No. 167, Article 8.

[21] Labour Inspection Convention, 1947 (No.81), Article 13.

[22] Advice on employers' duties and practical guidance on a legal, administrative, technical and educational framework for safety and health in the construction sector may be found in the ILO Code of Practice entitled: *Safety and health in construction*, available at: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/normativeinstrument/wcms_107826.pdf

In many countries, employers and workers pinpoint safe systems of work when they are conducting risk assessments.[23] These assessments identify the hazards to which workers are exposed and those workers liable to be injured; they also identify the current level of risk and determine whether it is acceptable. If this is not the case, the assessment should go on to identify further control measures that will reduce the level of risk to an acceptable level. When proposing further control measures, those completing the assessment should select the control measures in accordance with the following hierarchy of risk control measures:

1. Elimination: removal of the hazard, e.g. remove the need to work at height;
2. Substitution: e.g. replace the material or process in question with a less hazardous one;
3. Engineering controls: e.g. prevent access to the hazard; and
4. Administrative controls: e.g. identify procedures/instructions to work safely and supervisory methods;
5. Personal protective equipment (PPE): **when all the above measures have been found to be ineffective.**

There can be no denying that using PPE to reduce the risks on a construction site is an important control measure (see section 3.3.3). However, it should not be an option before considering the other four listed above: elimination, substitution, engineering and administrative controls. PPE is **personal** and thus only protects the person using it. The other control measures provide collective protection from the hazard – and therefore all workers are protected. They are subsequently more effective.

A practical example of this hierarchy of risk control measures is documented in section 3.3.4.1 – Work at height.

3.3.2 The site inspection

The site inspection will examine the working practices being followed to ensure that they are, in fact, safe. During the visit labour inspectors will not only examine compliance with national laws and regulations but also provide technical advice on how to comply with the legislation. The preventive/risk control measures detailed in the following sections are internationally recognized; they reduce exposure to hazards and thus, when in place, make it less likely that workers will succumb to accidents or suffer ill health.

3.3.2.1 Site boundaries

It is not only workers who are at risk from construction work; members of the public, including children, may also be at risk. Labour inspectors should verify that those in control of the site have given due consideration to this matter when setting up the site.

Given that there are various hazards on a construction site, unauthorized access to the site should be controlled. The level of controls required to prevent unauthorized access will depend on the hazards that are present and the location of the construction site. For example,

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[23] Further information on carrying out a risk assessment is contained in the ILO publication: *Training package on workplace risk assessment and management for small and medium-sized enterprises*, available at: http://www.ilo.org/safework/info/instr/WCMS_215344/lang--en/index.htm; and in the ILO leaflet: *A 5 Step Guide for employers, workers and their representatives on conducting workplace risk assessments*, available at: http://www.ilo.org/safework/info/publications/WCMS_232886/lang--en/index.htm

if the construction site is opposite a school, there is a high possibility that children may visit it and in this instance it would be appropriate to fence the site off, as shown in figure 2.

Figure 2. A fenced construction site.

Some construction activities are carried out on footpaths or roadways, or on scaffolding above streets. Those in control of the activity should ensure that measures are in place to prevent members of the public from being exposed to the work activities. These might involve providing pedestrians with a fenced walkway away from the work activity, or placing fans on scaffolding to prevent any items that are dislodged from striking persons below. Demolition work is particularly hazardous and those in control must ensure that adequate measures are in place to prevent members of public from accessing the work site.

If it is not possible to fence off the site, other steps should be taken to warn the public of the dangers. In situations where any person has uncontrolled access to areas where they could fall a distance liable to cause personal injury, those in control of the site should ensure that effective measures are in place to prevent persons from falling and being injured.

Labour inspectors should identify what measures are in place at the end of the working day to reduce the chance that persons, including children, who access the site might be injured. This will ensure that appropriate action is taken – or the competent authority informed in the event that this is not under the mandate of the Labour Inspectorate. The following measures may be taken:

- Barrier off or cover over excavations, pits etc.;
- Isolate and immobilize vehicles and plant; if possible lock them in a compound;
- Store building materials (such as pipes, manhole rings, cement bags etc.) so that they cannot topple or roll over;
- Remove access ladders from excavations and scaffolds; and
- Lock away hazardous substances.

3.3.2.2 Welfare facilities

Construction workers are on site for a full working day and their work activities often require considerable physical effort; they also carry out tasks that contaminate their hands and forearms.

Consequently, welfare facilities should be provided to reduce the risks inherent in these activities. These facilities should include: places to rest and eat meals; areas to store PPE; toilets and washing areas (which may need to include showering facilities); and sometimes sleeping accommodation.

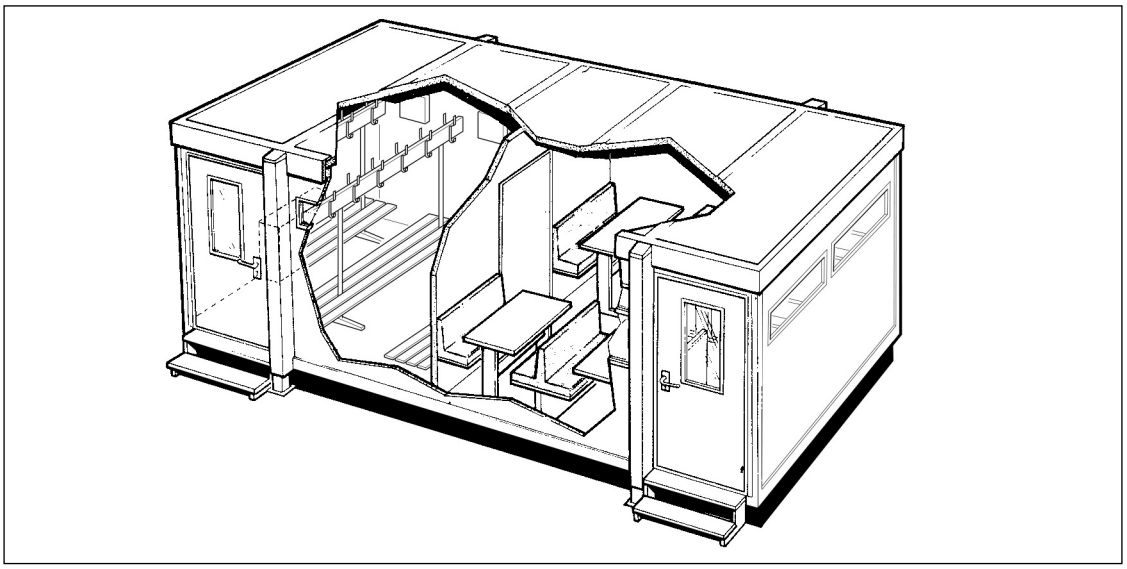
When sleeping accommodation is provided, appropriate showering facilities should also be made available. These accommodation blocks should be kept clean, and sufficient space must be provided for all those expected to be present. This accommodation should be away from the main work areas so that workers can rest without being disturbed by the construction activities.

Workers who are able to use suitable toilet and washing facilities to wash their hands and forearms and to rest in a clean area when they eat their meals, will recuperate more effectively from their exertions. Tired and dejected workers are more likely to lose their concentration and be accident-prone.

The rest facilities will need to take into account local climatic conditions; in some instances air conditioning or heating will be required to ensure that workers are able to rest properly. An adequate supply of drinking water should always be available for all those expected to be on site, and it must be kept free from contamination.

If the welfare facilities also provide storage areas for the PPE supplied by the enterprise, workers will be able to leave their PPE on site, so that it will always be on hand when required.

Figure 3. Rest facilities with storage room for PPE.



3.3.2.3 Housekeeping

Those in control of the site must plan how it will be kept tidy. Generally speaking, many materials are delivered to a construction site, and these generate waste. Ensuring that the site has a reception area or a planned storage area near where the goods are required, enables the site management to keep control of deliveries and helps to avoid double/treble handling (unnecessary movement of materials). If this extra handling is done manually, workers are more likely to suffer from manual handling injuries; and if the materials are moved mechanically, workers are more prone to being struck by vehicles, if suitable controls have not been put in place.

Having a designated area for waste, particularly combustible waste, will help towards reducing the risk of fire, as the fuel (combustible material) will be stored in one area away, so far as practicable, from potential sources of ignition.

Figure 4. A good example of housekeeping showing a designated waste collection area.

An untidy site presents many hazards. Workers may slip and trip over objects[24] that are left lying around, and a slip or a trip may be the precursor to a more hazardous event – for example, a fall from height. Workers may fall on to sharp objects, such as reinforcing rods. It is good practice to cover these protruding reinforcing rods (see figure 6).

Figure 5. Unprotected reinforcing rods presenting an impaling hazard.

Figure 6. Protected reinforcing rods, where the risk of being impaled is controlled.

Figure 7. Poor housekeeping depicting debris that could fall onto workers below and an untidy site presenting trip hazards.

Furthermore, materials and other objects that have not been tidied away may fall onto persons below.

[24] For more information see section 3.3.4.7.

3.3.2.4 Emergency procedures

Site management will need to ensure that procedures for dealing with emergencies are in place. The most common emergencies that may occur on construction sites are fire and accidents. However, site management must plan for all possible emergencies (the type of emergency that may occur will depend on the type of work being carried out and the site's location). These matters should be addressed before any site work commences.

To ascertain whether these matters have been addressed, labour inspectors could question management about the emergency procedures at the site and ask the following:

- How are workers on site made aware of an emergency? For instance, if there is a fire, how are all workers alerted? Where will they be evacuated? How have they learned of this information? How will management be able to ensure that all workers have been evacuated from the area and are accounted for? Are roll calls carried out? What happens in the event of an accident?
- What is the procedure for alerting the emergency services (fire/medical service)? Who is responsible for this?
- Have any fire drills been carried out?
- How has management ensured that sub-contractors are aware of the procedures?

The management's replies to the above questions, and any others, should be verified with workers at the site.

3.3.3 Personal protective equipment

The use of PPE as a control measure to prevent exposure to hazards is common on construction sites, and the labour inspectors will expect to see the following:

a) Hard hats – to protect workers' heads from, for example:

- Loose material being kicked into an excavation;
- Materials falling from a scaffold platform;
- Materials falling off a load being lifted by a crane or goods hoist or carried on a site dumper or truck;
- A fitting dropped by a worker, while they erect or dismantle a scaffold.

b) Footwear (waterproof) with steel (rigid) toecaps and steel (rigid) mid-soles – to protect workers' feet from, for example:

- Materials being dropped;
- Nails or other sharp objects penetrating the sole of the shoe;
- Cement burns on the skin, sustained when concrete is being poured.

c) Goggles and safety spectacles to protect workers' eyes from, for example:

- Flying objects, e.g. when using a nail gun (the goggles need to be shatterproof and the correct standard, check the manufacturer's specification);
- Sparks, e.g. when disc cutting;

- Ultraviolet radiation from welding (specialist shields or goggles are required);
- Chemical splashes – it may be necessary to use complete face shields to protect against chemical splashes.

d) High visibility clothing to ensure that workers can be seen and to prevent them from being struck by equipment. This is particularly important in situations where:

- They could be run down by vehicles, e.g. when signalling to drivers involved in vehicle movements or during road work activities;
- They need to be seen by others, e.g. when signalling to crane drivers.

e) Gloves to protect workers' hands from dermatitis when working, for instance, with cement dusts, wet cement and solvents, and from cuts, blisters and splinters when handling such materials as bricks, steel and wood. Labour inspectors will need to ensure that the gloves that have been supplied are suitable for the task (for instance a cloth glove would not be suitable for providing protection against liquids, a thin waterproof glove is unlikely to prevent cuts when handling bricks and stone).

f) Outdoor clothing to ensure that workers are protected from the weather (e.g. wind, rain and sun).

Labour inspectors will need to make sure that all the PPE has been supplied by the employer, is properly maintained, has not passed its expiry date, and is effectively used by workers. Furthermore, the workers should not have to bear the cost for any occupational safety and health measures including PPE.[25]

3.3.4 Common working activities and hazards at a construction site and recognized control measures

3.3.4.1 Work at height

Working at height means working at a level where a worker may fall a distance likely to cause personal injury. Examples of this include: working on a roof, working on the floors of a building under construction, working at ground level where the worker may fall into an excavated area, and working on ladders.

The worker in figure 9 (next page) may fall a smaller distance than the worker in figure 8 – but he is at risk of impaling himself on the upright of the scaffolding.

Falls account for a high percentage of accidents in the construction sector and, due to their very nature, a high percentage of them result in a severe or even a fatal injury. All workers and supervisors must therefore receive information and training on the perception of the risk and on safe working practices with regard to work at height. Labour inspectors will need to ascertain the systems of work that workers actually use when working at height, and to identify whether these are safe.

[25] Convention No. 155, Articles 16 and 21.

Figures 8 and 9. Workers in situations where they are at risk of falling distances likely to cause personal injury.

There is a hierarchy of control measures with regard to working at height, and this is detailed below (along with practical examples).

Hierarchy of control measures with regard to working at height

Avoid working at height unless it is essential (e.g. erect guard rails on steelwork at ground level and then crane the steel and the guard rails into position; wash windows using a long pole to avoid the need to work off ladders; fix nets using extending poles).

Prevent falls by using an existing safe place of work that does not require the use or addition of work equipment to prevent a fall (e.g. a flat roof with permanent edge protection).

Prevent falls by using work equipment that protects all those at risk (e.g. access equipment fitted with guard rails, such as independent scaffolds, tower scaffolds, mobile elevating work platforms (MEWPs) and mast climbing work platforms (MCWPs)).

Prevent falls by using work equipment that protects the individual (e.g. a harness with a short lanyard which makes it impossible for a person to get to a fall position (this is called work restraint) or use a podium).

Mitigate falls by using work equipment to minimize the distance and consequences of a fall and protect all those at risk (e.g. nets or soft landing systems positioned close under the work surface).

Mitigate falls by using work equipment to minimize the distance and consequences of a fall and protect the individual (e.g. a personal fall arrest system with the anchorage point sited above the head, or a rope access system).

Mitigate falls by using work equipment that minimizes the consequences of a fall (e.g. nets rigged at a lower level, or inflatable injury protection).

Mitigate falls through training, instruction or other means (e.g. ensure ladders are inspected regularly and are used by competent people, demarcate areas to provide a warning, provide adequate lighting, apply sensible housekeeping measures, provide suitable footwear, etc.).

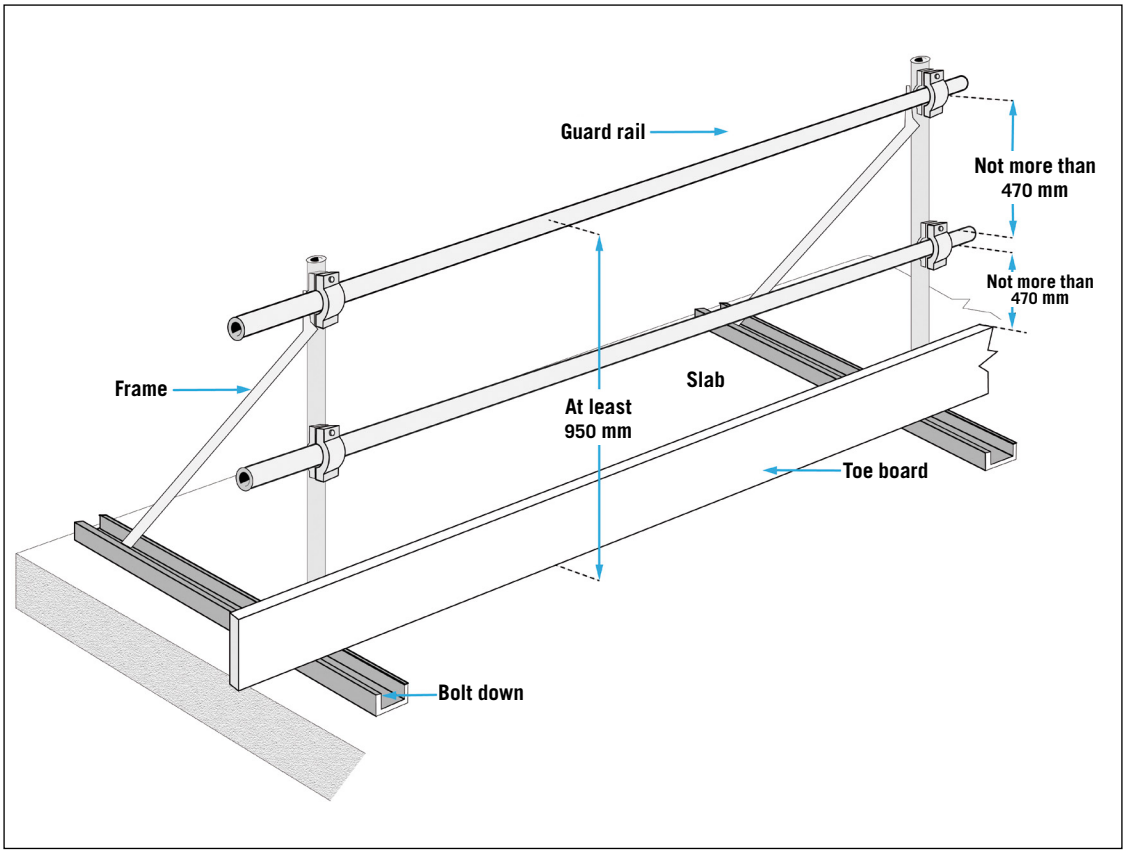
In descending the hierarchy of controls, it may be seen that the control measures change from "preventing" the fall to "mitigating" the consequences of a fall. If worksites prevent workers from falling, there is no possibility they can be injured from a fall. If worksites mitigate the consequences of a fall, the fall has occurred and workers may still be injured – although the injuries should normally be less severe.

Labour inspectors will need to inspect work at height and ascertain what precautions are in place. Open edges where persons can fall should be protected. National legislation may detail the standard of guarding (the number of guard rails, the distance between the rails and their strength, and measures to prevent objects falling) that should be present, and labour inspectors should ensure that there is compliance with this standard.

Placing two guard rails at equidistance helps to minimize the possibility that workers may fall from unprotected edges, roofs, scaffolding, mobile working platforms, suspended access equipment, etc. (see figure 10). A toe board will reduce the chance of objects falling from the work area onto workers below. Where material is to be stacked in the work area, the toe board or other similar barriers should be at least as high as the stacked material, again to prevent objects falling from the working platform.

These guard rails or other barriers must be strong and rigid enough to prevent a worker from falling if they trip or lean against the barrier. Ropes or chains do not fulfil this criterion, as they do not provide rigid protection. Unsuitable edge protection gives workers a false sense of security.

Figure 10. Typical requirements for edge protection.



Many worksites use scaffolding to provide safe working platforms – and the edge protection on these platforms should be up to the standard depicted in figure 10. In addition, the working platform should be fully boarded, be 600 millimetres wide, and provide safe access and a suitable work area. The boarding must be in good condition and should not overhang the supports by more than four times the thickness of the board. Boarding with more of an overhang is likely to tip if workers walk on the ends, causing them or other objects to fall.

Scaffolds must be based on a firm level foundation, which is able to support the weight of the scaffold and any loads likely to be placed on it. The scaffold must be braced, tied into the structure or otherwise stabilized (see figure 11). There must be a safe means of access to the scaffold, and the ladders used to access should be securely tied on both stiles to prevent them from slipping and extend at least one metre above the landing point to provide a secure handhold (see figure 12). At ladder access points, a self-closing gate (see figures 12 and 13) is recommended.

Figure 11. An independent scaffold complete with edge protection, bracing, footplates and ties.

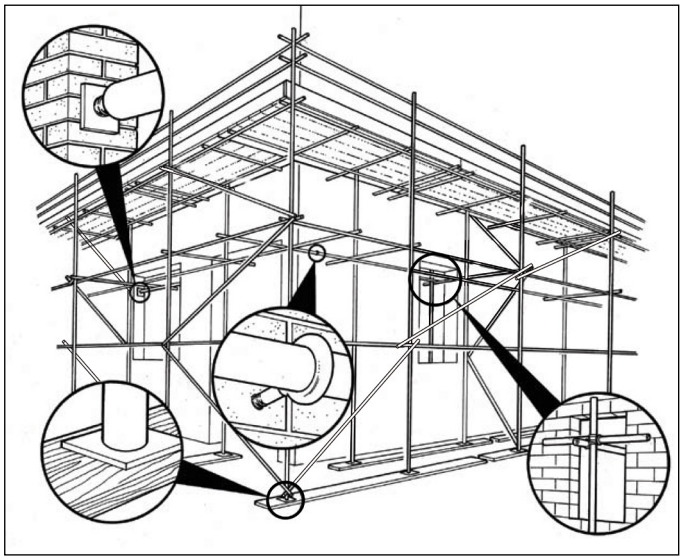
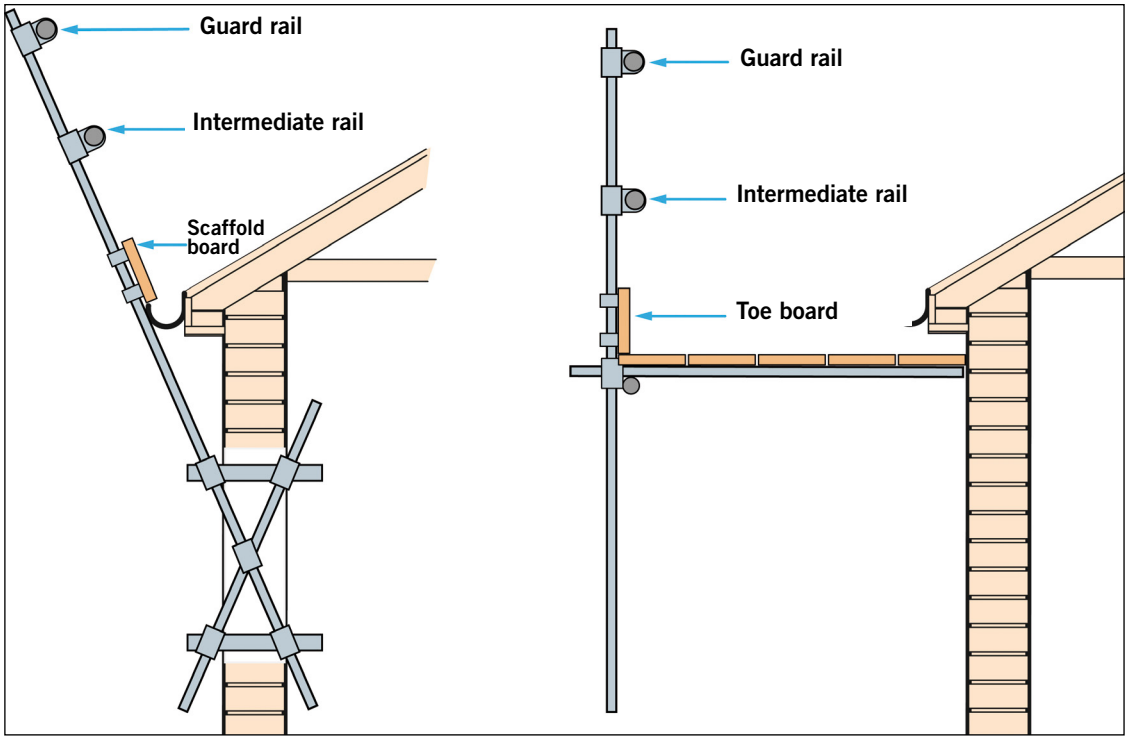


Figure 12. A ladder correctly positioned and secured near the access platform.

Figure 13. A self-closing gate at a scaffolding access point.

Many workers are involved in roof work – either specialist roof work in initial construction or general maintenance activities – and fatal/serious accidents often occur due to a lack of measures to prevent falls. Control measures such as MEWPs or scaffolding (figure 14) with appropriate edge protection can and should be used to prevent persons falling when they are working on sloping roofs.

Figure 14. Typical sloping-roof edge protection.

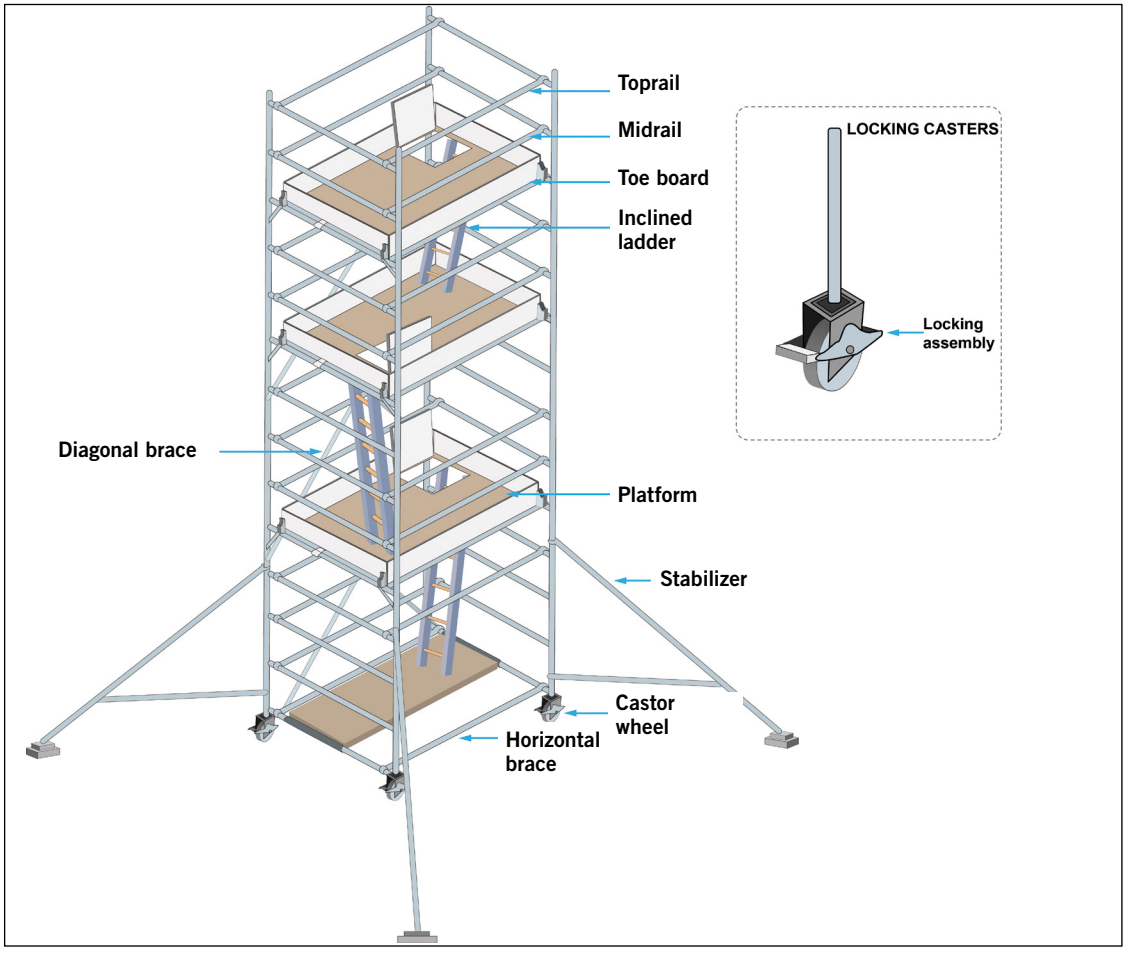


During the erection and dismantling of scaffolding, workers should ensure that precautions are in place to prevent falls; these may include advanced guard rails or work harnesses with a means of fall arrest. This work should not be carried out above workers or members of the public, and measures must be in place to prevent persons entering the area, i.e. it should be fenced or cordoned off.

After the assembly in any position of working platforms, scaffolding, mobile working platforms, tower scaffolds, suspended access equipment etc., and after events that may have affected their stability (such as high winds), those in control of the site must ensure that the platforms are safe and have been correctly installed. The inspection of the working platform by a competent person[26] is one way of ensuring this. A competent person means a person possessing adequate qualifications, such as suitable training and sufficient knowledge, experience and skills for the safe performance of the specific work. In some countries, the competent authorities may define appropriate criteria for the designation of such persons and may determine the duties assigned to them. In other countries those erecting the working platforms have to confirm to the site management, with documentation, that the platforms comply with the appropriate standard and are safe to use.

Mobile (tower) scaffolds are widely used on construction sites, both on new buildings and renovations, and are constructed using prefabricated sections (normally aluminium). They provide safe working platforms, if they are assembled correctly (leaving out sections reduces their

Figure 15. An appropriately constructed mobile scaffold.



[26] Convention No. 167, Article 2.

strength and stability) and used in a safe manner. Workers erecting tower scaffolds must be competent and trained to do this specific job. Once the tower has been erected it will need to be examined to ensure it is a safe working platform. The mobile scaffolds must rest on firm level ground with the castor wheels locked and any base plates properly supported, and there must be checks to ensure that there are no overhead cabling/power lines in the vicinity. The stabilizers should be installed in accordance with the instruction manual, and the working platforms or storage areas must be fitted with suitable edge protection (guard rails and toe boards). There should be a safe way to get to the working platform, for instance by using the internal ladder.

When working on the mobile scaffold, workers must not use the working platform to support other ladders or access equipment, as this will affect the stability of the mobile scaffold. The stability will also be affected by attaching sheeting or using the platform for water jetting or grit blasting activities, or hoisting or lowering materials. When moving the mobile scaffold, the intended route should be checked to ensure that there are no power lines or other obstructions and that the path is firm and level. The scaffold should be reduced to a maximum height of four metres – and no workers should be on the scaffold when it is moved.

Figure 16. An appropriately constructed mobile scaffold in use.

Mobile elevated working platforms are used on site to provide safe access in a variety of situations. Labour inspectors will need to ensure that the operators have been suitably trained in the use of such equipment. Matters to be considered include ensuring that: the equipment is not operated near overhead (cables) power lines; the ground has been prepared for the passage of the equipment (level and firm and any service drains can support its passage); the machine has an emergency stop that can be operated from its base; the maximum wind speed in which the machine can operate has been identified; and workers are wearing a harness with a short work-restraint lanyard attached to a suitable anchor point to prevent them from getting into a position where they can fall (unless the machine overturns).

Figure 17. Examples of mobile elevated working platforms (note the edge protection and the use of the work harness).

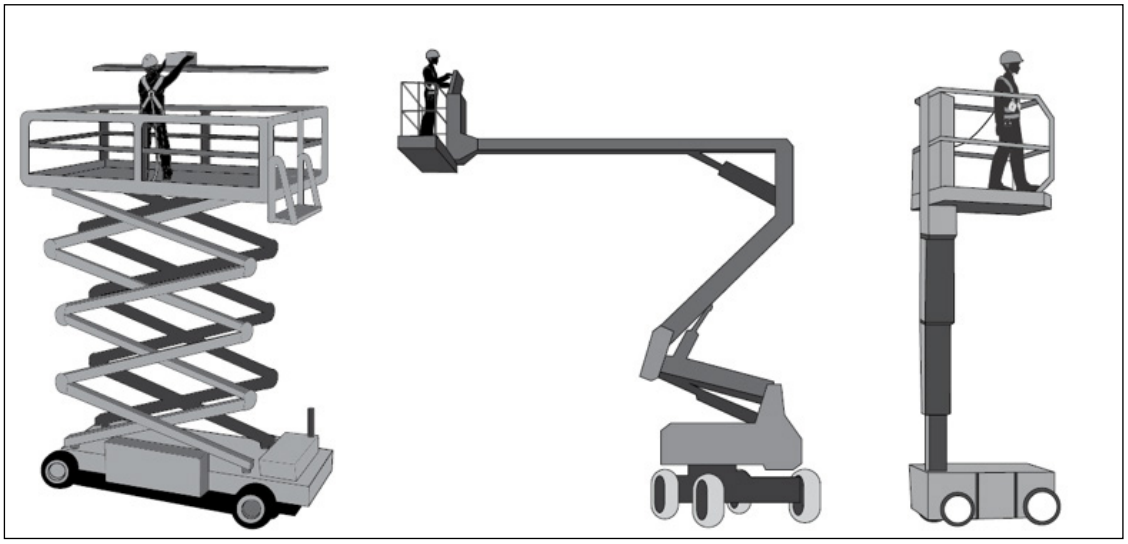
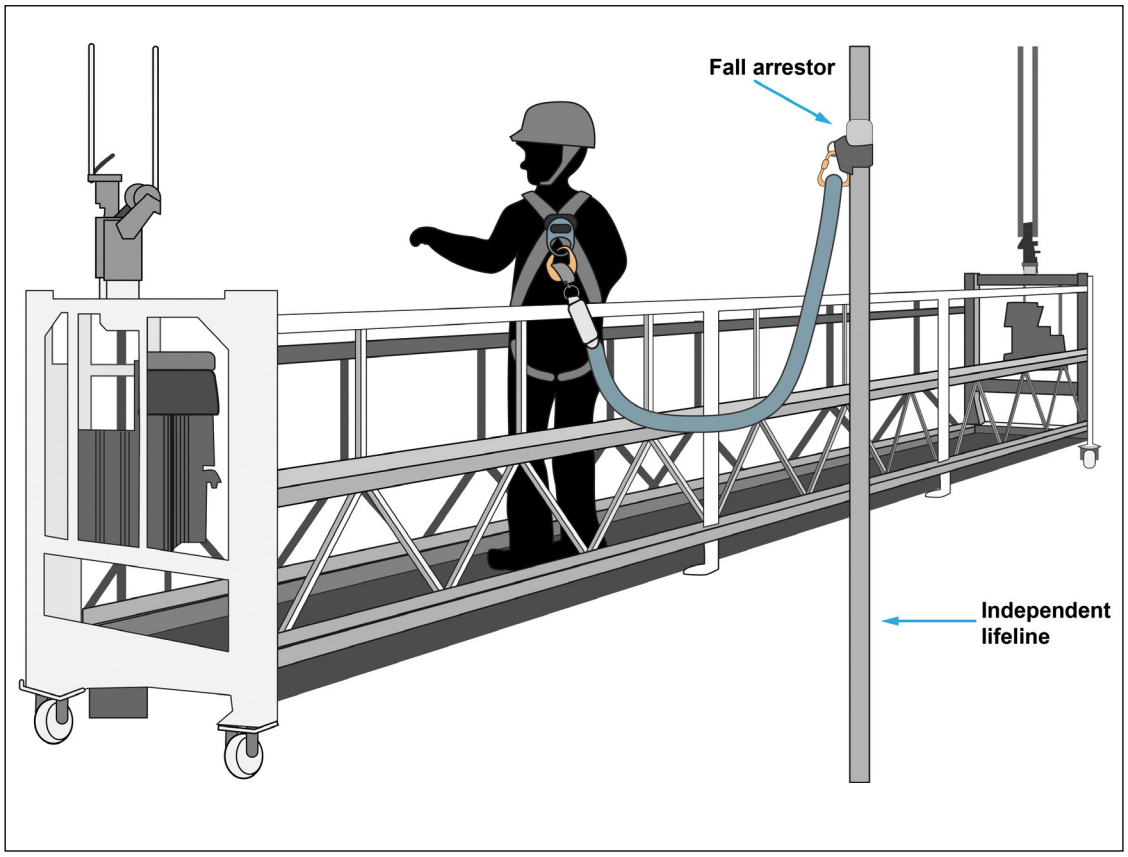


Figure 18. A mobile elevated working platform being used in an office to change light fixtures.

Suspended scaffolds are common on construction sites and must be installed by competent persons and inspected before use. They must be fitted with 360 degree edge protection to the same standard as all other working platforms. In addition, workers should wear a full body harness coupled to a personal fall arrest system attached to a vertical lifeline, which is independent from the scaffold. Workers must ensure that the scaffolds are not overloaded and that they are aware of its safe working load, as well as of other safe operating

procedures for using this equipment. This includes, but is not limited to, carrying out checks before first use – the suspended scaffold can be lifted a small distance off the ground and workers can verify that the critical connectors are correctly coupled and the scaffold runs freely. Accessing the scaffold is safest from ground level; if this is not possible, secure the scaffold to the building to prevent it moving away from the building when it is accessed.

Figure 19. Suspended scaffold with suitable edge protection and worker with appropriate personal fall protective equipment.



National legislation may require periodic examinations of MEWPs, suspended scaffolds or other lifting equipment, and labour inspectors should request to see these examinations to ensure they have been carried out. Labour inspectors should also verify that any maintenance requirements documented on these examinations have actually been completed within the time limits prescribed.

In addition to the above-mentioned collective edge protection arrangements to prevent falls (where all persons on the working platform are protected), there are personal protective devices that only protect an individual from falling (other persons who may be present are not protected). Travel restraint systems are one such system and can be used on their own (figure 20) or in combination with other systems (figure 21). These systems consist of a harness coupled to a lifeline/lanyard of a defined length attached to an appropriate anchorage point. This system prevents the worker from reaching an unprotected edge and falling. As these systems only protect the worker who is wearing them, they should only be used after all other forms of edge protection have been considered, and deemed not possible, following the risk assessment process.

Figure 20. A short lanyard preventing the worker from reaching an unprotected edge.

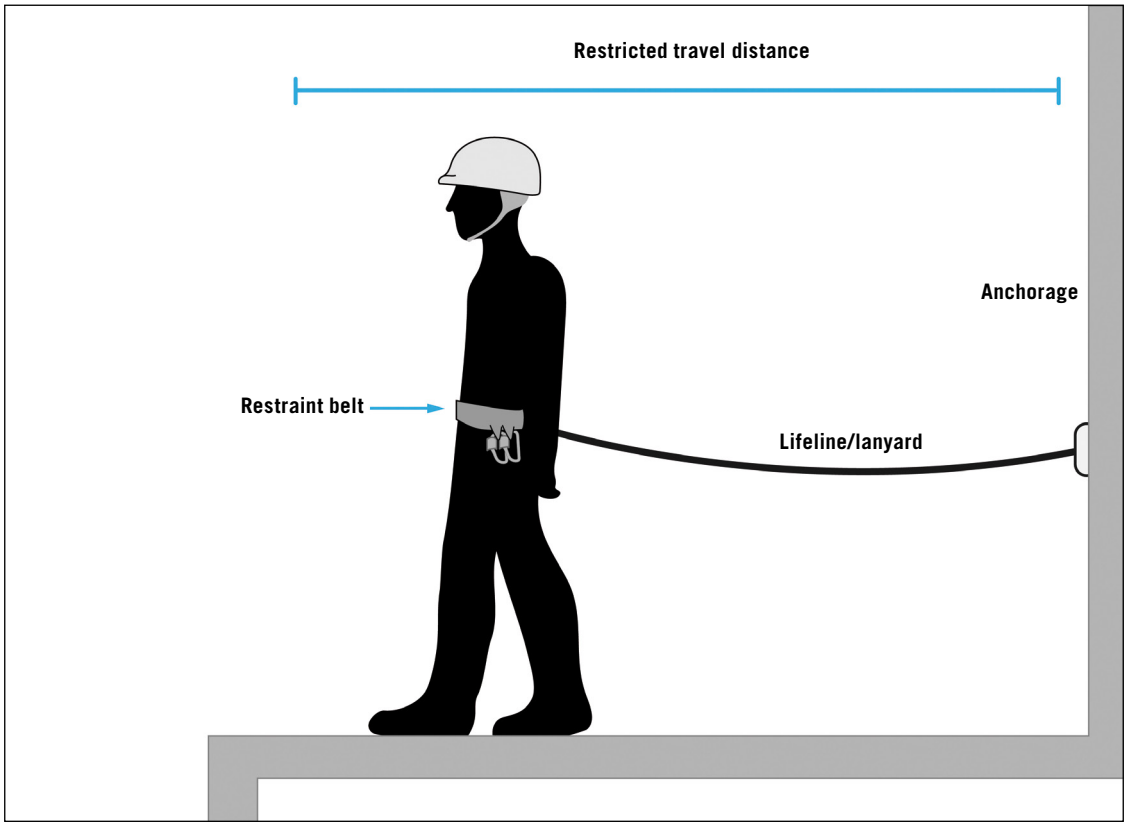
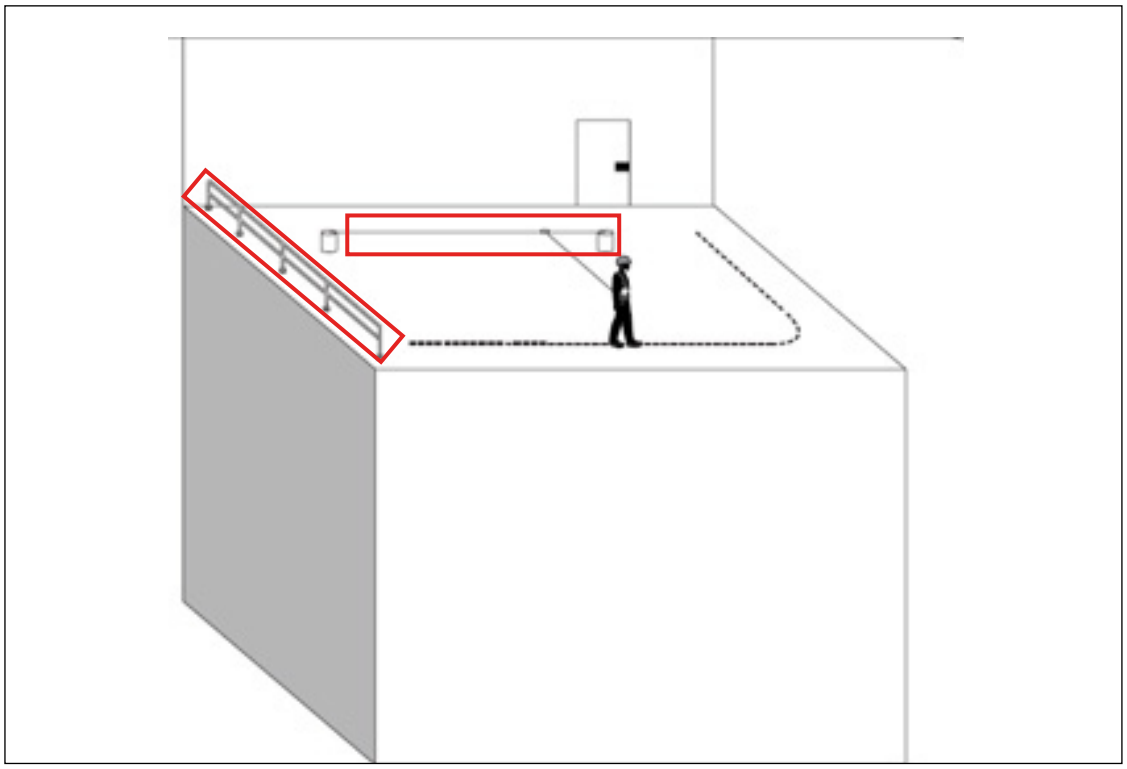


Figure 21. A restricted lanyard system being used in conjunction with guard rails.

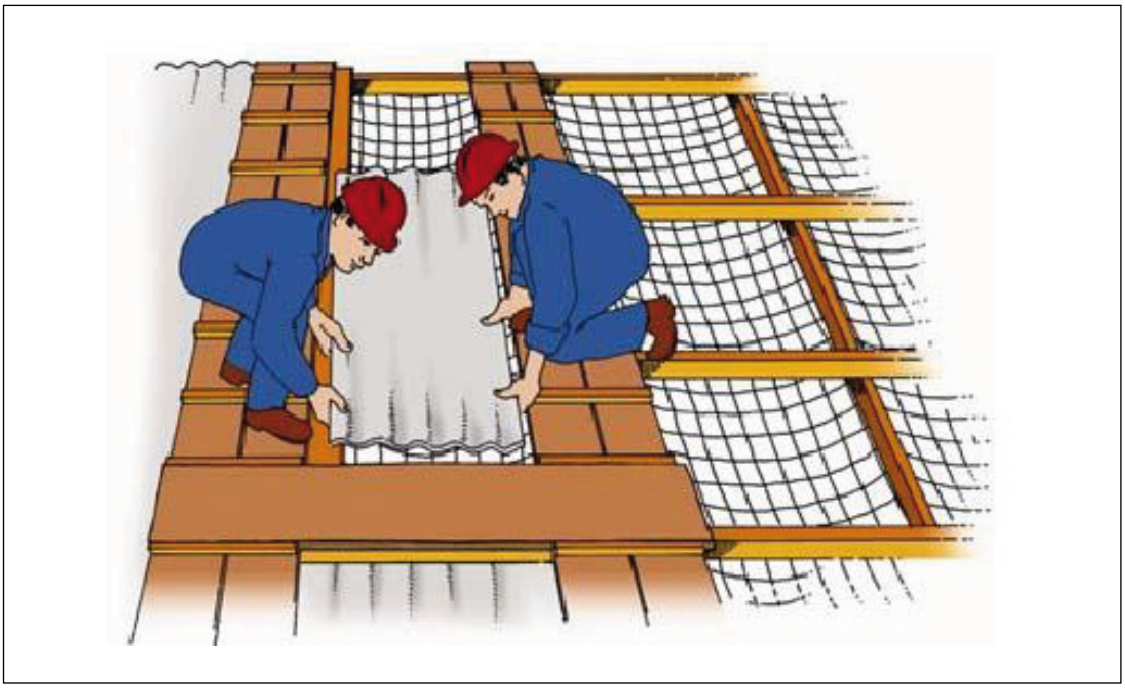


In addition to the above measures that prevent workers from falling, there are other measures that mitigate the consequences of a fall. These include safety nets, soft landing systems and personal fall arrest systems. These are not a substitute for fall protection measures but can be used in conjunction with them if the risk of a fall cannot be eliminated.

The installation of safety nets is a complex process and should only be carried out by trained competent workers. Whenever possible, to reduce the risk to those installing the net, the work should be done at ground level; for example, the nets could be strung between the steelwork before it is raised into position. In all situations the nets should be strung as closely as possible to the working position to reduce the distance a worker might fall. After installation, a competent person should examine the nets to confirm that they are safe; a certificate of examination may be provided. If nets are used, labour inspectors should enquire as to what systems are in place to rescue persons who have fallen into the nets. Workers who fall into nets may strike objects as they fall and emergency aid may need to be given whilst they are in the net.

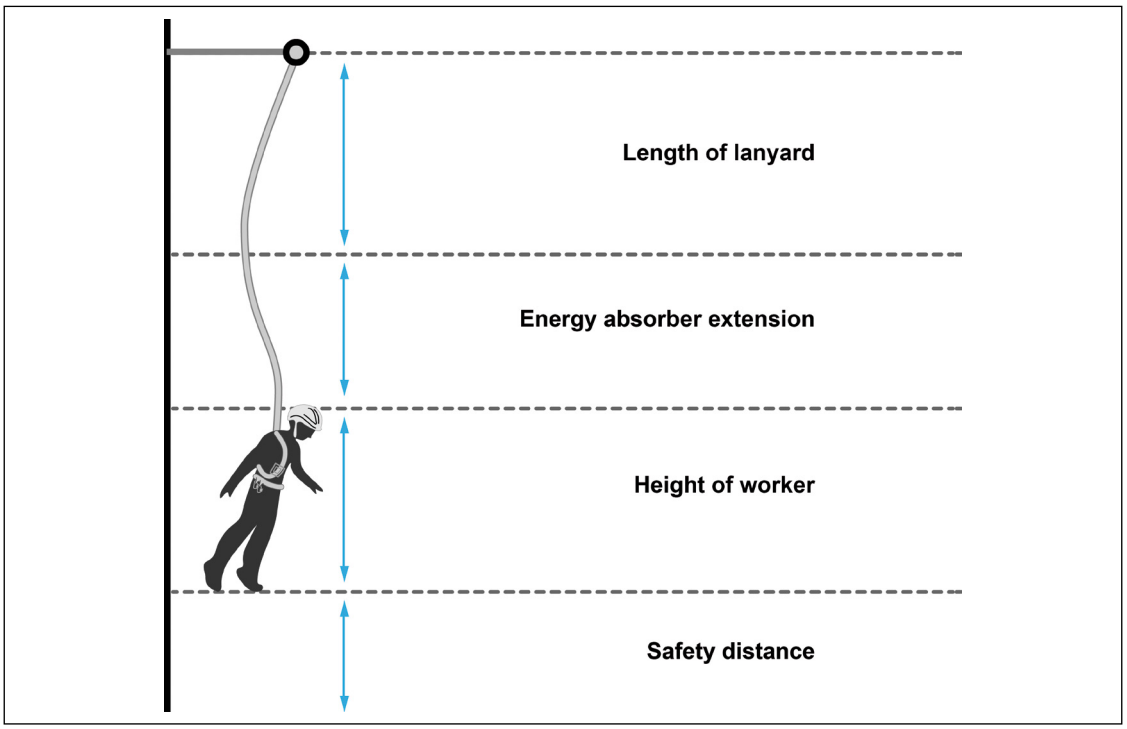
Labour inspectors should enquire as to how those in control of the site have ensured that the nets are to the appropriate standard, and ask what site inspections are carried out to guarantee they remain at the required standard; weekly inspections by competent persons would assist with this.

Figure 22. Safety nets in place.



To reiterate, personal fall arrest systems do not prevent wearers from falling; however, when correctly installed and used, they reduce the distance a person may fall. These systems consist of an anchor point, a body harness, energy absorbers and lanyards (connecting the harness to the anchor point). Workers who use personal fall arrest systems need to be suitably trained, know how to wear the harness and make adjustments so it fits correctly, and know how to connect it to a suitable anchor point. Workers must check that there is an adequate safety distance (clearance) to allow the system to deploy and stop the fall before they strike the ground.

Figure 23. Factors affecting safe deployment of fall arrest systems to prevent workers from striking the ground.



Whenever possible, anchor points should be above the worker's head as this reduces the distance of the fall and the "pendulum" swing that might occur. If it is impossible to use an anchor point above the worker's head, the manufacturer's instructions must be consulted, as additional forces are applied in a fall when lower anchor points are used.

Workers should make sure that all the components of the fall arrest system are inspected for wear and tear before each use, and further detailed inspections should be periodically conducted.

Where personal fall arrest systems are used, labour inspectors should ascertain whether daily inspections are being carried out and ensure that users have been appropriately trained. They should also check whether the safe systems of work described above are being followed.

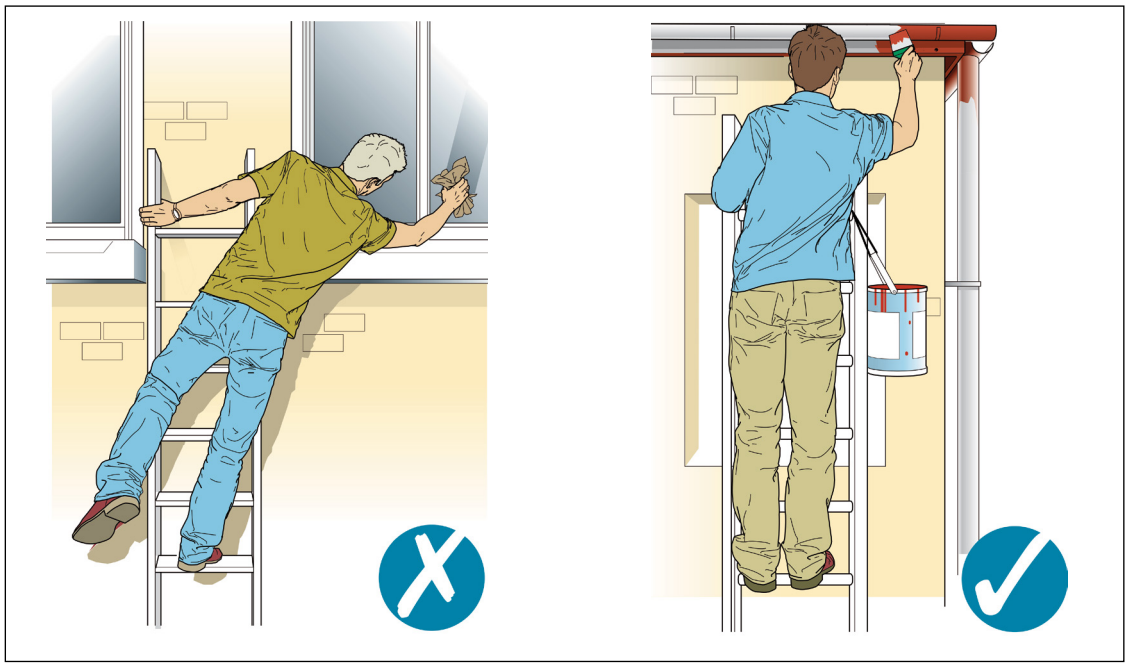
Ladders and stepladders

The improper use of ladders and stepladders is frequently a contributing causal factor in accidents. Those in control of the work should ensure, before resorting to a ladder or step-ladder, that other more suitable equipment, for example MEWPs, cannot be used. MEWPs are safer as they are more stable – and often more efficient. When ladders and stepladders are being used, workers must ensure that they are in good condition by checking that the stiles are not damaged, buckled or warped, no rungs are damaged or missing, and the feet are in good repair.

Those using the ladders or stepladders should check that they are not overloaded (ladders have a safe working load and workers and their equipment can overload them). Workers must not overreach as this may cause the ladder to slip and fall. They should also try to keep their belt buckle inside the stiles and three points of contact (both feet and one hand, both hands one foot) should be maintained with the ladder (figure 25).

Figure 24. Incorrect working position on a ladder.

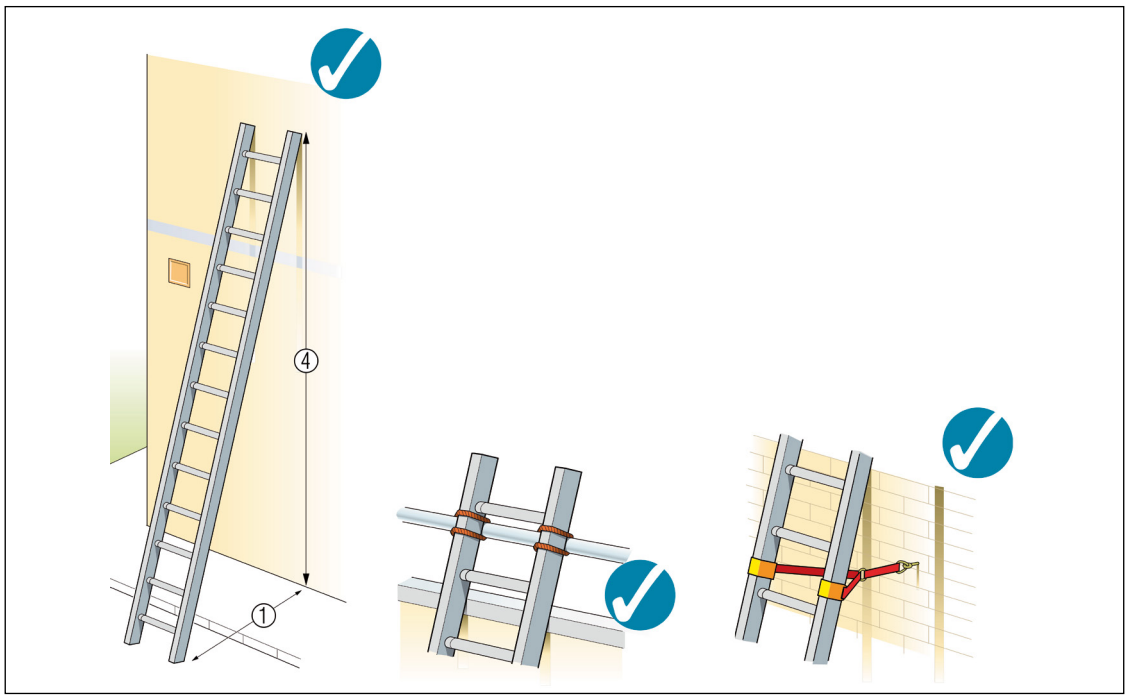
Figure 25. Correct working position on a ladder.



Ladders should be positioned at an angle of “one out for every four up” (figure 26) and secured, whenever possible, by tying both stiles (figure 27). Where it is not possible to tie the stiles, other measures should be in place to prevent the ladder slipping sideways, such as ladder stays or anti-slip devices.

Figure 26. Correct one in four angle for ladder.

Figures 27. Ladder correctly secured at top stiles (correct for working on but not for access) and at base.



When workers use stepladders they should ensure that: all four feet of the stepladder are stable and the steps face the work activity (stepladders are not designed for side loading, working at 90 degrees to the steps can cause them to overbalance and fall); any restraint devices are fully open; and all locking mechanisms are engaged. They must maintain three points of contact at the working position – this means both feet and one hand, or when both hands need to be free for a brief period, two feet on the same step of the stepladder and the body (knees or chest) supported by the stepladder (figures 28 and 29). A secure handhold must also be available.

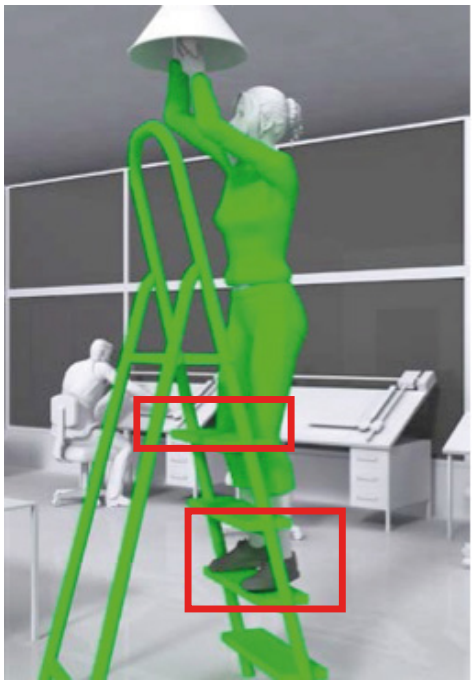
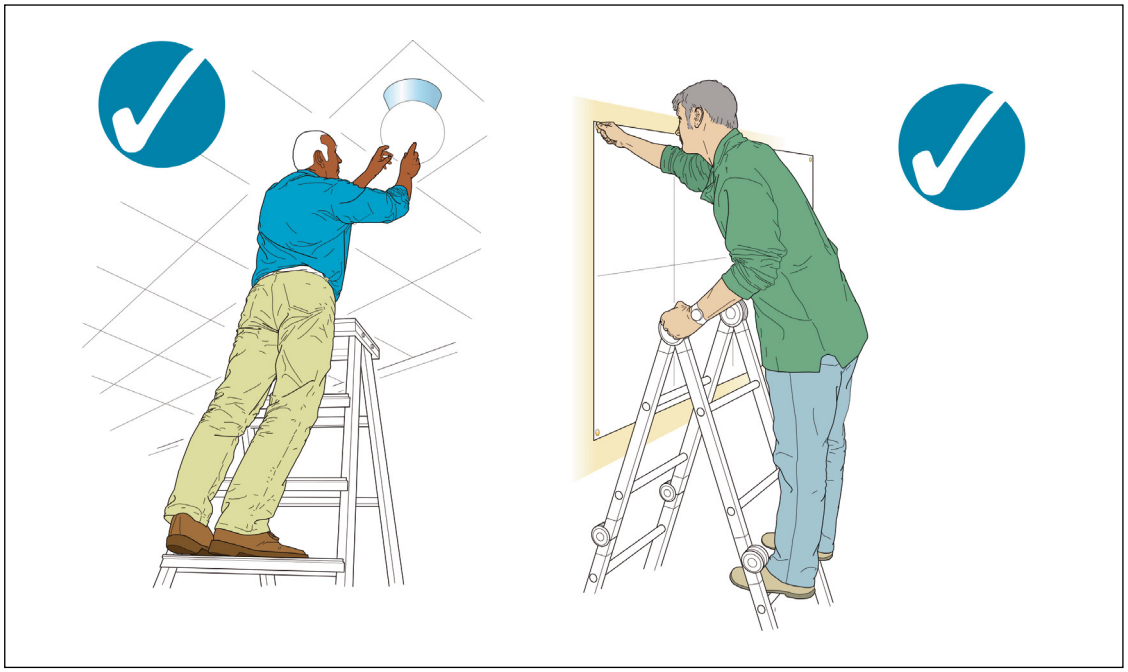


Figure 28. Worker maintaining three points of contact when using a stepladder.

Also in the case of stepladders, workers should not use the top two rungs or three steps (where the last step is the very top of the ladder) to gain access to a higher level, as they will be unable to maintain the three points of contact – and when working in this position the steps will be more likely to overbalance.

Figure 29. Workers correctly positioned on a stepladder.



3.3.4.2 Working with vehicles

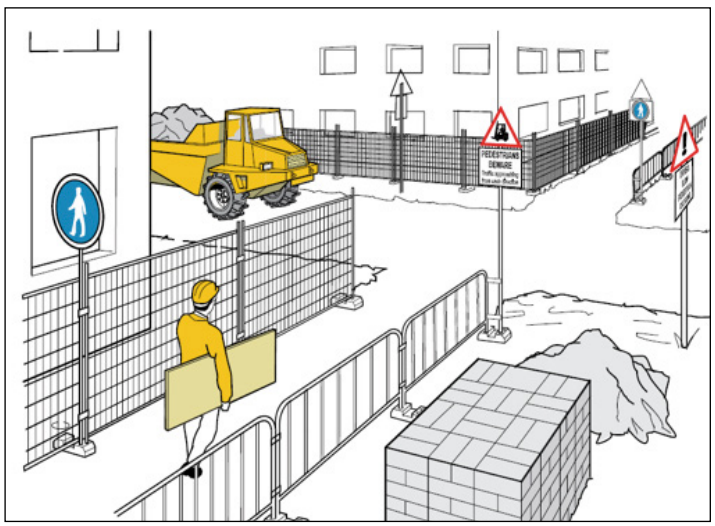
Moving vehicles often cause injuries to workers on construction sites. The vehicle movements consist, inter alia, of goods vehicles involved in deliveries, dumper trucks transporting spoil, excavators used in groundworks, and vehicles transporting workers. The injuries are sustained as a result of workers being struck by a vehicle (particularly during reversing operations), workers falling off the vehicle or being struck by loads falling off the vehicle, or by the vehicle overturning.

When conducting the site inspection, the labour inspectors should ascertain how vehicle movements are managed on the site. This may be achieved by looking at the following three aspects: safe site, safe vehicle and safe driver.

Safe site: Has site management planned how the vehicular traffic will flow on the site? The planning of work activities will affect the numbers of vehicles that are needed on site. For example, has the management identified what spoil will be needed for landscaping at the end of the project? This material could be stored on the site itself, thereby avoiding the need for vehicles to take it away and bring it back when required – and reducing the numbers of vehicle movements.

A great deal of material has to be delivered to a construction project. What action has been taken by the site management to ensure that these products can be delivered safely? With regard to the traffic routes, are they free from obstruction with firm and even surfaces? What efforts have been taken to separate pedestrians from vehicles? Where pedestrians and vehicles have to share the same route, have barriers been provided to separate them? Are there clearly signed, well-lit pedestrian crossing points (figure 30) so that drivers and pedestrians are aware of each other's presence?

Figure 30. A well designed pedestrian and vehicle crossing point.



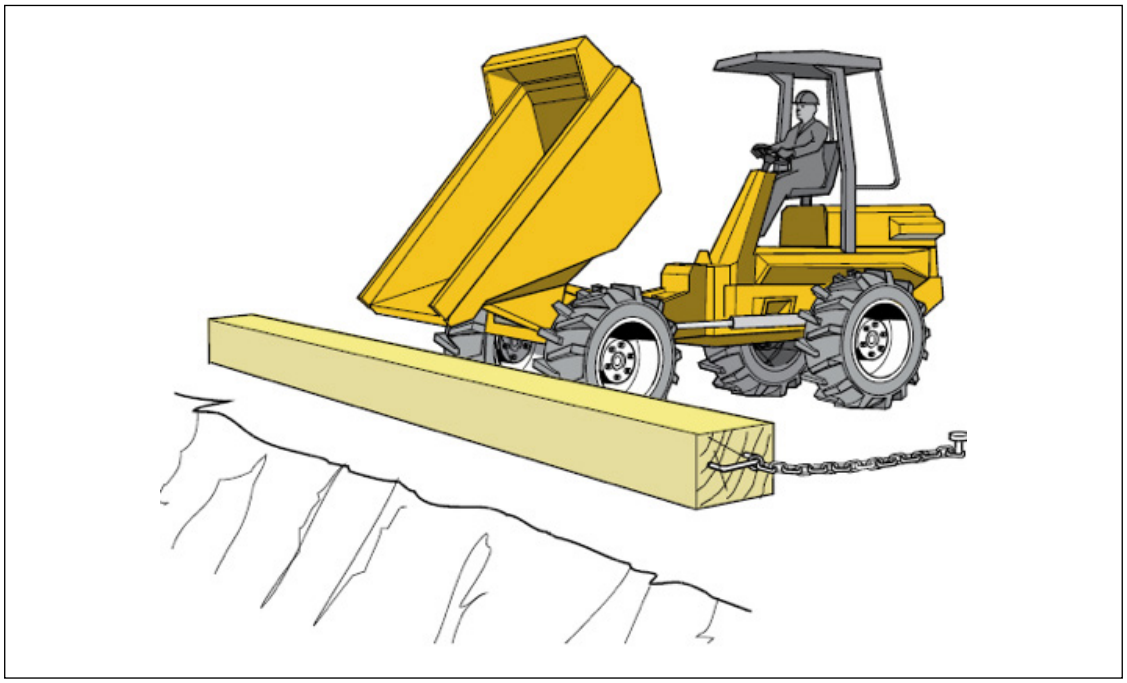
Are speed limits indicated? Are there are other signs showing the drivers the routes they should follow? Where is the reception area for deliveries? Has it been designed to ensure one-way traffic movement? If this is not the case, how and where do the vehicles turn once they have been unloaded or loaded? Has a turning area been established that is free from pedestrians so reversing operations can be completed safely? If this is not the case, what measures are in place to ensure reversing can be carried out safely? Are trained signallers, wearing appropriate high-visibility clothing, on the site?

How are visiting drivers made aware of the site rules and procedures? All pedestrians (a driver is a pedestrian once he or she has left the vehicle) should wear high-visibility clothing to enhance the likelihood that vehicle operators will see them.

With regard to actual work areas, what measures are in place to prevent vehicles, including working plant, from hitting temporary structures, working platforms or trapping other workers? Have barriers been suitably placed to reduce the chance of this happening? Particular attention should be taken where slewing plant (e.g. cranes and excavators) is used as, when this rotates, workers may be trapped against structures if there is inadequate clearance around the vehicles.

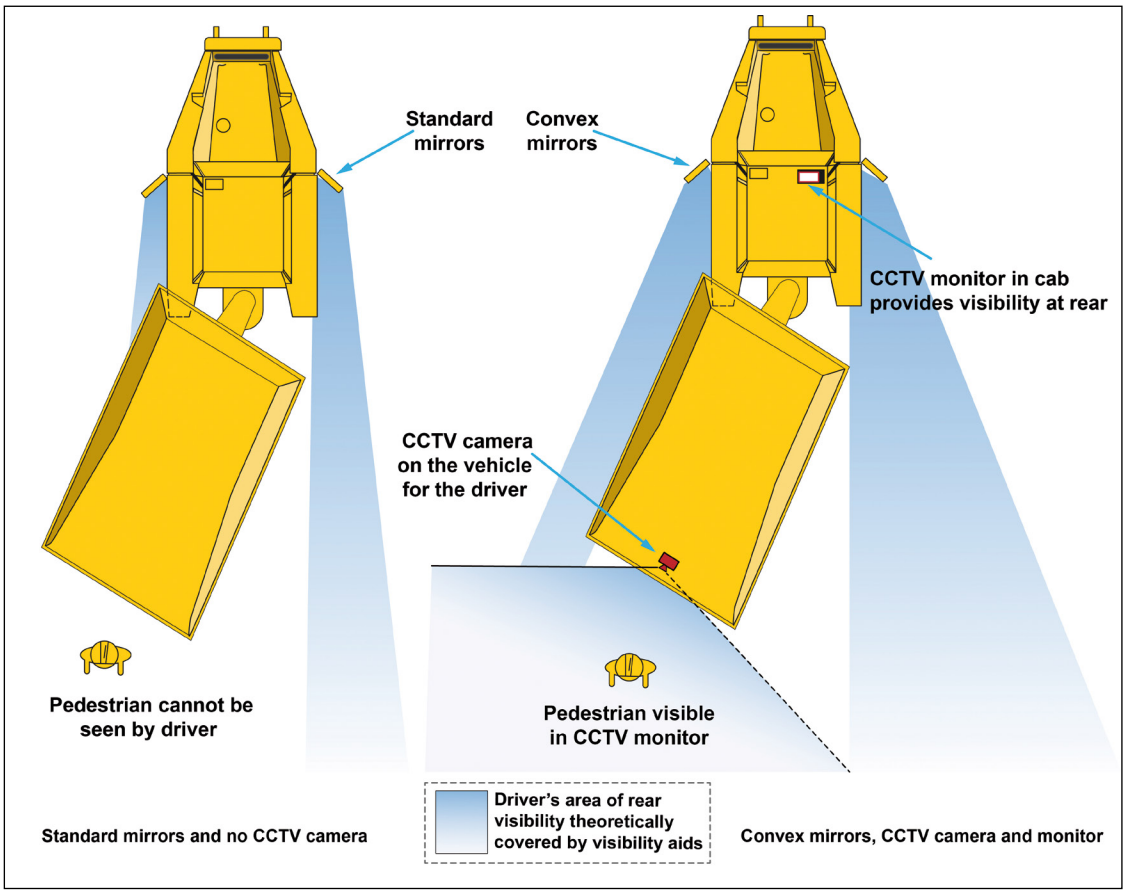
Where plant, such as dumper trucks and lorries, tips material into excavations, have suitable stock blocks been positioned to prevent the plant from falling into the excavation?

Figure 31. Stop block to prevent dumper entering the excavation.



Safe vehicle: What control measures does the site management use when selecting plant – and not just their plant but plant used by others? Is there a requirement for all plant to be fitted with roll over protective structures (ROPS), and where necessary a falling object protective structure (FOPS)? If subcontractors supply their own plant, does the site management stipulate specific requirements, such as the size of plant or the need for maintenance or thorough examination certificates before it can enter the site? Has site management stipulated a requirement for reversing aids to be fitted to all or specific vehicles on site, e.g. reversing cameras or alarms, or additional mirrors (maintained in good condition) fitted to the vehicles? A site safely designed and these aids greatly increase the driver's visibility and therefore reduce risks to other workers.

Figure 32. Fitting vision aids such as convex mirrors and CCTV greatly increase drivers' visibility.



Construction site vehicles operate in harsh conditions and require regular maintenance to ensure that they remain in good working order. Do drivers carry out and document daily or weekly inspections? How does site management ensure that maintenance is carried out on the plant in accordance with the manufacturer's instructions, including on the steering, brakes, lights, vision aids, ROPS and FOPS? Are vehicles under a planned preventive maintenance scheme (when maintenance is scheduled to take place to prevent breakdowns, which is more likely to ensure the plant remains safe) or under a breakdown maintenance programme (when the plant is maintained after it has failed)?

Safe driver: Many accidents are a result of untrained or inexperienced workers driving construction vehicles. Labour inspectors will need to ascertain how the site management ensures that all vehicle drivers are trained and competent. Are vehicle operators required to hold licences with regard to specific plant? Are records of training kept? Are there records of workers who are authorized to operate particular plant? What controls are in place to ensure that unauthorized workers cannot operate vehicles? For example, do operators have to remove the keys from the vehicles when they are not in use? Is there any active supervision of driver behaviour – for example are vehicle speeds and load security checked? If so, are records kept on the matters identified and discussed?

3.3.4.3 Groundwork

The main hazards to which construction workers are exposed during excavations include contact with underground services – electrical cables, gas and water pipes; the collapse of the excavation; workers and vehicles falling into the excavation; and materials falling onto workers in the excavation. Drowning and asphyxiation from the ingress of water and gases, respectively, are also hazards to workers involved in excavation work.

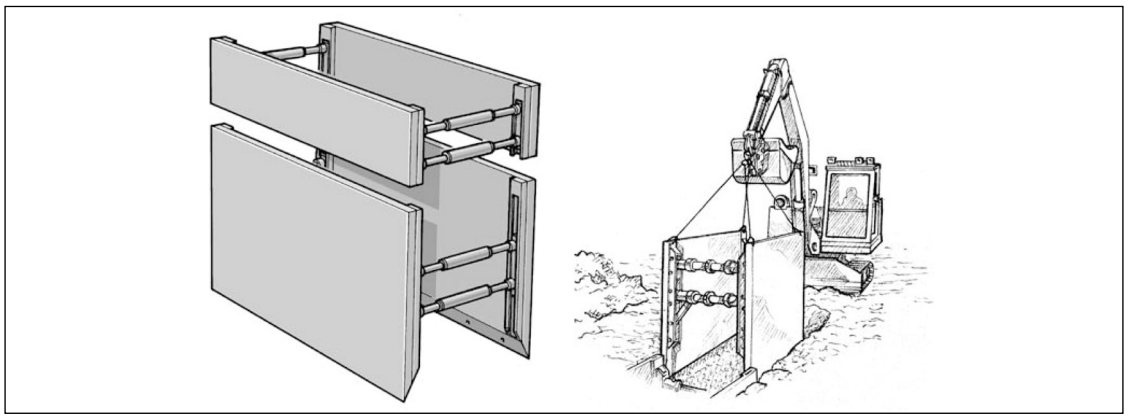
Figure 33. Workers in an excavation.

In the light of these possible hazards, the labour inspector may wish to question if the sides of the excavation are sufficiently stepped/battered back to prevent their collapse (this will depend on the ground conditions and expected ground water conditions). Taking figure 33 as an example, the inspector should note that the measures marking the edge of the excavation (plastic on a string) will not prevent people or materials (the highlighted pallet) from falling onto workers in the excavation.

Before conducting any groundwork, those in control of the site should take all reasonable measures to ascertain whether any underground services are present and locate these. Once located, these services must be appropriately marked to ensure that all workers are aware of their presence. The required material and equipment should also be located before starting work.

When excavating trenches, the precautions required will depend on the type of excavation, the nature of the ground and the ground water conditions. Preventing the sides from collapsing can be achieved by using trench supports, which should be installed as soon as there is sufficient space to do so. Where these trench supports are used, all workers in the trench should remain within the confines of these supports. The trench supports should extend out of the trench to prevent material falling into the trench and onto workers working inside them.

Figure 34. Trench boxes put in place without workers needing to enter the excavation.



In some situations an unsupported trench may be entered – but **ONLY** if the sides of the trench have been battered back at a sufficient angle to prevent them collapsing inwards. The required angle will depend on the ground type and ground water conditions (how wet the ground is). A competent person must determine the required angle, and an inspection should be carried out before anyone enters the trench to verify that the sides will not collapse.

Vehicle movements near to an excavation should be kept to a minimum. This not only reduces the possibility of their falling into the excavation, but also vehicles passing close to an excavation may overload the trench sides – increasing the risk of collapse. Precautions should also be taken to prevent workers from falling into the excavations. This may be achieved by erecting barriers similar to those used to protect people working at height, i.e. two guard rails. These can be fitted to the trench box (figure 35) or erected next to the trench (figure 36).

Figure 35. Trench box (extending out of the trench to prevent material falling into the trench) with guard rails attached.

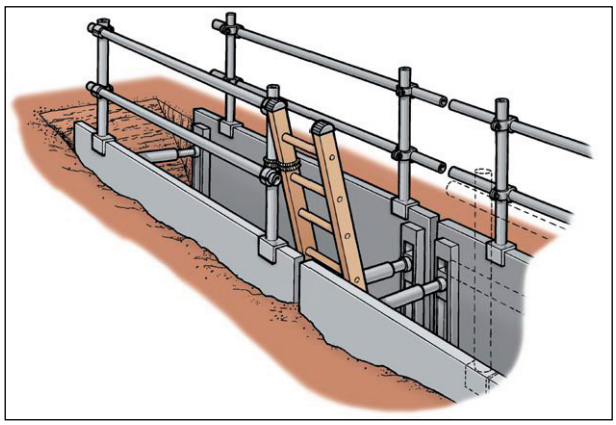
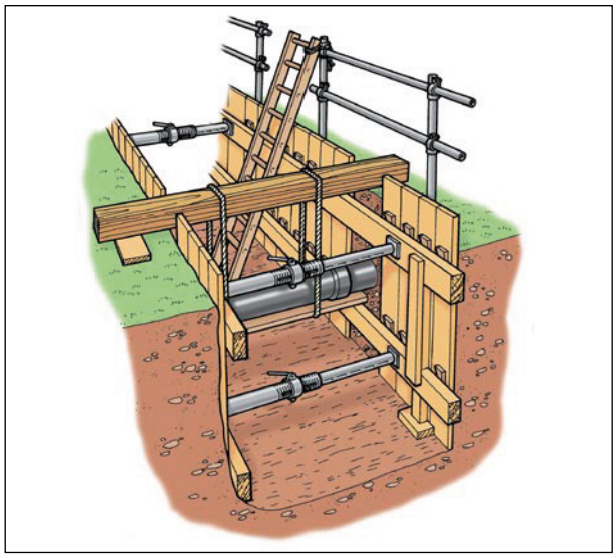


Figure 36. An excavation supported by timbering and props with guard rails (only shown on the right). The timbering is extended to act as toe boards; a secured ladder provides access to the trench and the exposed services have been supported.



3.3.4.4 Moving materials/goods safely

Workers on construction sites will be involved in moving large quantities of goods/materials, either using powered equipment or manually. Many workers are killed or suffer serious accidents when these activities are not carried out in a safe manner. For instance, accidents may be caused by cranes and other lifting equipment overturning, material falling from hoists, or slinging failures. Long-term injuries may also result from workers having to lift awkward and heavy loads such as block paving, kerb stones, and bagged materials such as cement and aggregates.

Those in control of the site need to ensure that the movement of goods has been properly planned. This begins with deciding what material is required and when and how (in what form/packaging) it will be transported to the site. When materials are delivered on pallets, they can then be moved to their destination by fork-lift trucks. Receiving material before it is required may mean that it has to be handled twice, and this is not only inefficient but will increase the risks to workers.

This planning should ensure that, wherever possible, the goods may be moved without the workers having to lift them at all. Labour inspectors are commonly asked: "What is a safe or maximum weight to lift?" Unfortunately this is a question with no definitive answer. The degree of risk associated with lifting varies according to the nature of the load and its weight, the circumstances in which the lift takes place and its frequency. The risk for each and every worker is contingent upon their individual characteristics (size and strength). This is why every effort should be taken to reduce the need to move loads manually.

Where it is not possible to remove the need for manual handling, the risk of injury can be reduced by, amongst other things, using lighter materials, positioning the load as close as possible to its final destination by machine, and reducing the height from which it will have to be lifted. Limits may also be set on the weight of the products to be moved manually – by not requiring anyone to lift loads of more than 20 kilograms. Workers must also be trained in safe lifting techniques. Mechanical aids can equally be used, such as vacuum lifters for handling kerb stones.

Figures 37 and 38. A vacuum lifter for kerb stone lifting.

Gin wheels (figure 39) are also used for raising light loads and tools manually. When being used, they must be securely fixed and have a safe working platform for un/loading operations. The wheel should be clearly marked with the safe working load limit, and workers must inspect the lifting mechanisms, ropes and wheels before using them to ensure they are in a safe working condition.

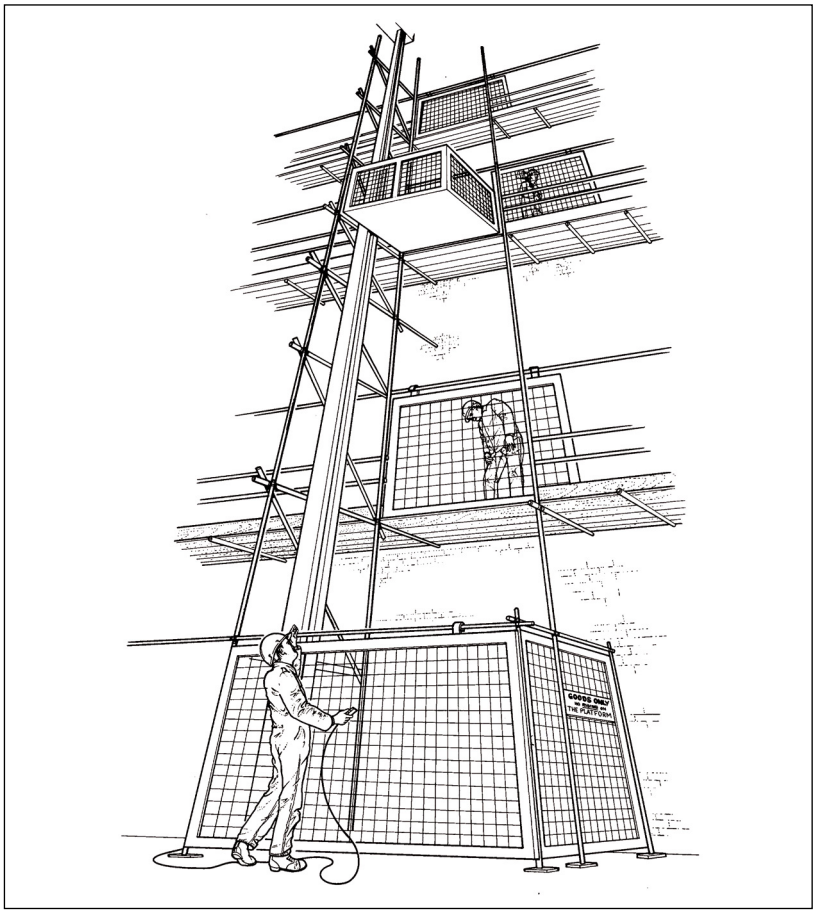
Figure 39. A gin wheel.

Hoists are also a common sight on construction sites and are used to raise and lower workers as well as materials. Those in control of the site must ensure that they are properly erected and secured to the supporting structure by trained and competent persons, in accordance with the manufacturer's instructions. The hoists should be marked as to their intended operation, i.e. materials only or materials and passengers, and be marked with their safe working load. Once erected, they should be thoroughly examined by a competent person to check that they are safe to use. National legislation may determine whether examination records are required before the hoists can be used. Competent persons should also carry out regular checks to ensure that the hoists remain in a safe working condition; once a week should suffice. Only trained, competent persons should operate this machinery. Goods hoists should not be used to lift passengers.

A correctly installed goods hoist should be operated from one working position only, and the operator should be able to see all the landing levels from this position. The landing positions should be fitted with a sliding gate that is only opened when the hoist is present at the landing and closed before the hoist departs. The distance between the hoist and the landing position must be kept to a minimum so as to prevent workers from falling between the hoists and the landing level during un/loading operations. At ground level, there should be a fence around the hoist's resting position to prevent workers entering the area and potentially being crushed by the descending hoist.

Workers loading the hoist must ensure that they do not exceed the safe working load; that the materials are evenly distributed on the hoist platform; and that the loads are secure and will not fall onto workers below or move as they are raised or lowered. For instance, wheelbarrows should be chocked and loose materials placed in appropriately secured containers.

Figure 40. A goods hoist where the operator has a clear view of each landing, which is protected by a sliding gate. The base of the hoist is also protected by a cage.



Most construction jobs will involve a certain amount of lifting operations, whether these involve the unloading of a lorry potentially completed by the vehicle's own lifting mechanisms, or the use of mobile or fixed cranes lifting large loads on the site.

Those in control of the site will need to verify that any plant authorized to conduct lifting operations on site has been maintained in an efficient state, is in effective working order and is operated by a competent trained operator. National legislation may require that any lifting equipment or accessories have been thoroughly examined within given timescales – or in the case of fixed lifting equipment after installation – and that such examinations have been documented. If this is the case, labour inspectors, when visiting, will need to ensure compliance with any such requirements and check that lifting operations are carried out in a safe manner.

Any lifting operation must be properly planned by a competent worker, appropriately supervised by a worker with expertise in lifting operations (in addition to the crane operator), and carried out in a safe manner by the crane operator, the slinger and the signaller. Labour inspectors will need to ensure that those involved in the lifting operations are able to prove they are competent.

The level of planning will depend on the complexity of the lifting operation that is to take place. However, no lifting operation is minor enough to be left to chance.

The planning will involve making sure that the correct crane has been selected for the job – i.e. that it will be able to lift the heaviest load at the required radius (the capacity of a crane decreases the further the load is lifted from the crane). The crane will also need to be able to access and leave the site and position itself safely. When positioning the crane, those involved in the lifting will need to check that: the crane operator has a clear view (if this is not the case, a competent banksman/signaller must be present when the lifts take place and be able to communicate with the crane operator either through agreed signals or radio communication); the crane is well away from overhead power lines and excavations, as well as railway lines – often required by national regulations; the ground conditions are level and able to support the crane and its intended loads. (When verifying this, workers must have checked that there are no voids or drains in the area where the crane is to be positioned, as these may fail and cause the crane to move or overturn.)

National legislation may specify that the crane should be fitted with an automatic safe load indicator. If this is the case, labour inspectors should verify that it is in good working order and operational during lifting operations, and that workers have identified the type of lifting accessories needed to ensure that the lifting hook is directly above the centre of gravity of the load (figure 42).

Loads must not be lifted over areas where others are working, thus preventing anyone underneath from being injured if any part of the load drops.

Figure 41. A mobile crane is supported on outriggers that are prevented from sinking into the ground by timber packing. The crane is positioned to ensure adequate clearance between the wall and the counterweight. The slings are protected by packing around the load. The load is fitted with a tag line to allow it to be easily controlled.

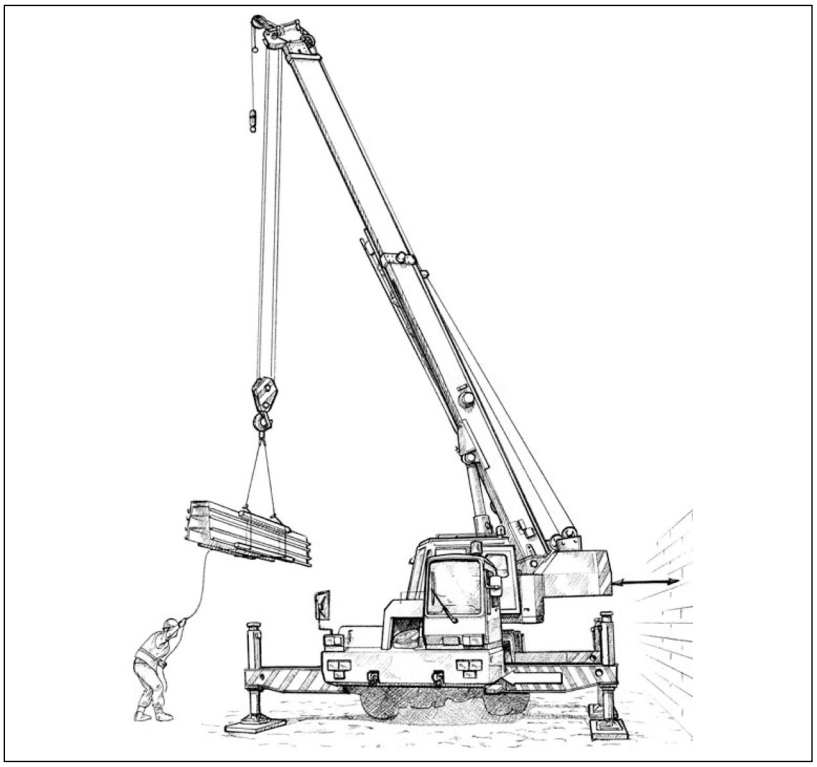
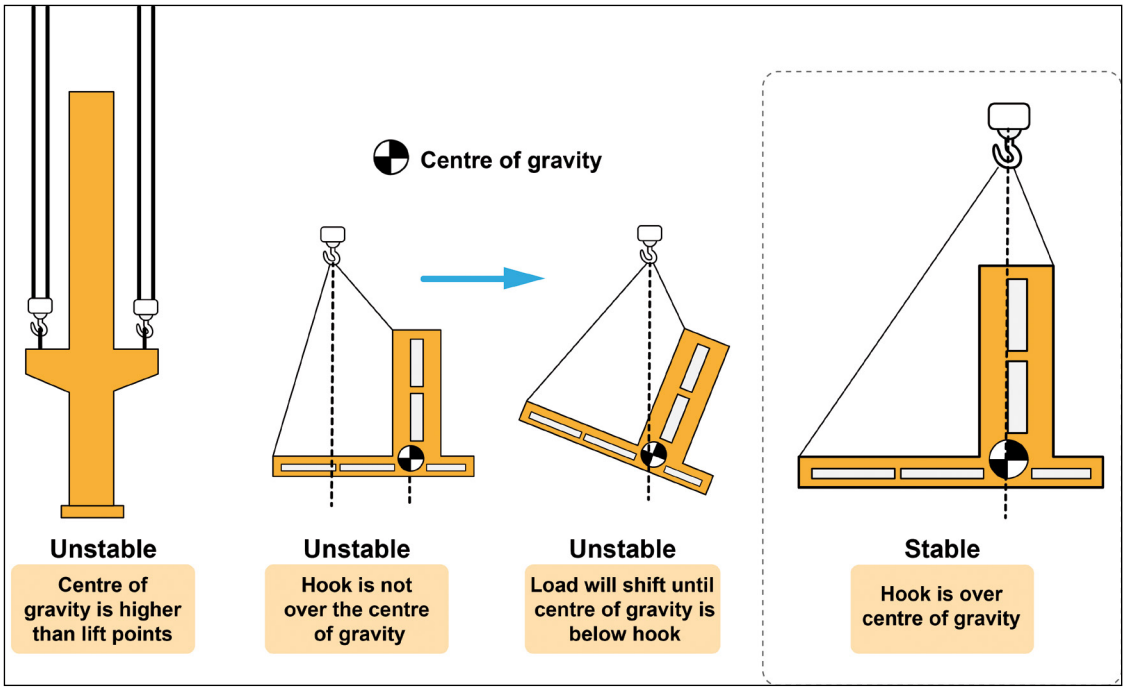


Figure 42. The centre of gravity must be beneath the hook.



3.3.4.5 Electricity

Electricity will be required on virtually all construction sites and differing control measures are necessary to ensure that workers are protected from this hazard. In section 3.3.4.3 ("Groundwork"), reference was made to underground electrical services and the need to identify and make all workers aware of these services before the excavation takes place. Contact with overhead electrical services also presents a risk to workers, often causing injury and death. Similarly, any work on electrical power supplies and with electrically powered equipment can result in serious or fatal injuries.

The most common operations leading to contact with overhead power lines are:

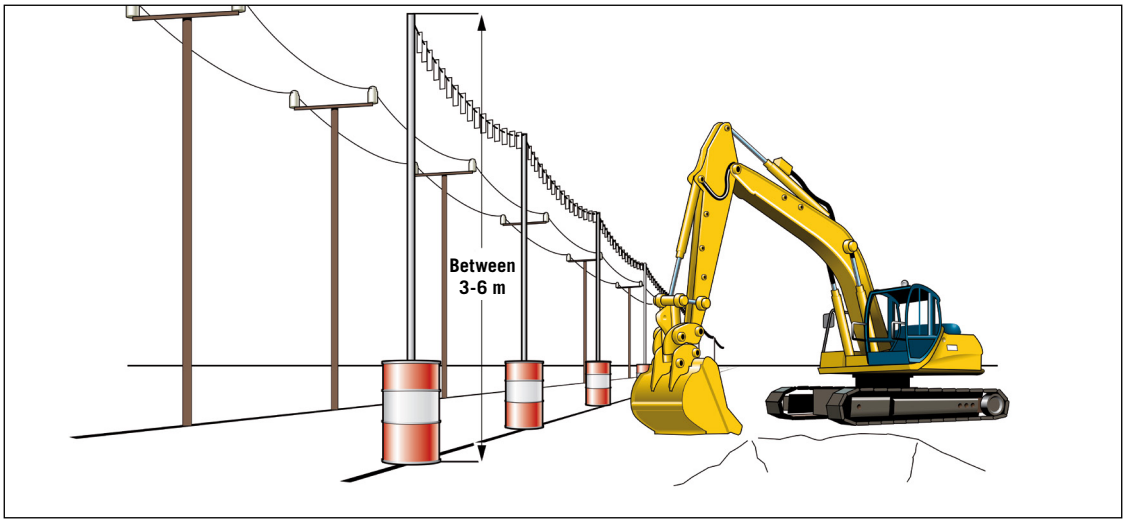
- Operating cranes and other lifting equipment;
- Raising the body or inclined container of tipper lorries;
- Operating excavators and other earth-moving equipment;
- Handling long items such as scaffold tubes, metal roof sheets, ladders etc.;
- Using MEWPs.

Labour inspectors will need to ascertain what precautions have been taken by those in control of the site to ensure that workers who are involved in the above operations cannot contact overhead power lines.

Whenever possible, all work likely to lead to contact with overhead power lines should be carried out well away from the power lines themselves. Where this is not possible, every effort should be taken to make the lines dead, i.e. turn off the power. And where this is not feasible, consideration should be given to asking the power supplier to reroute the cables.

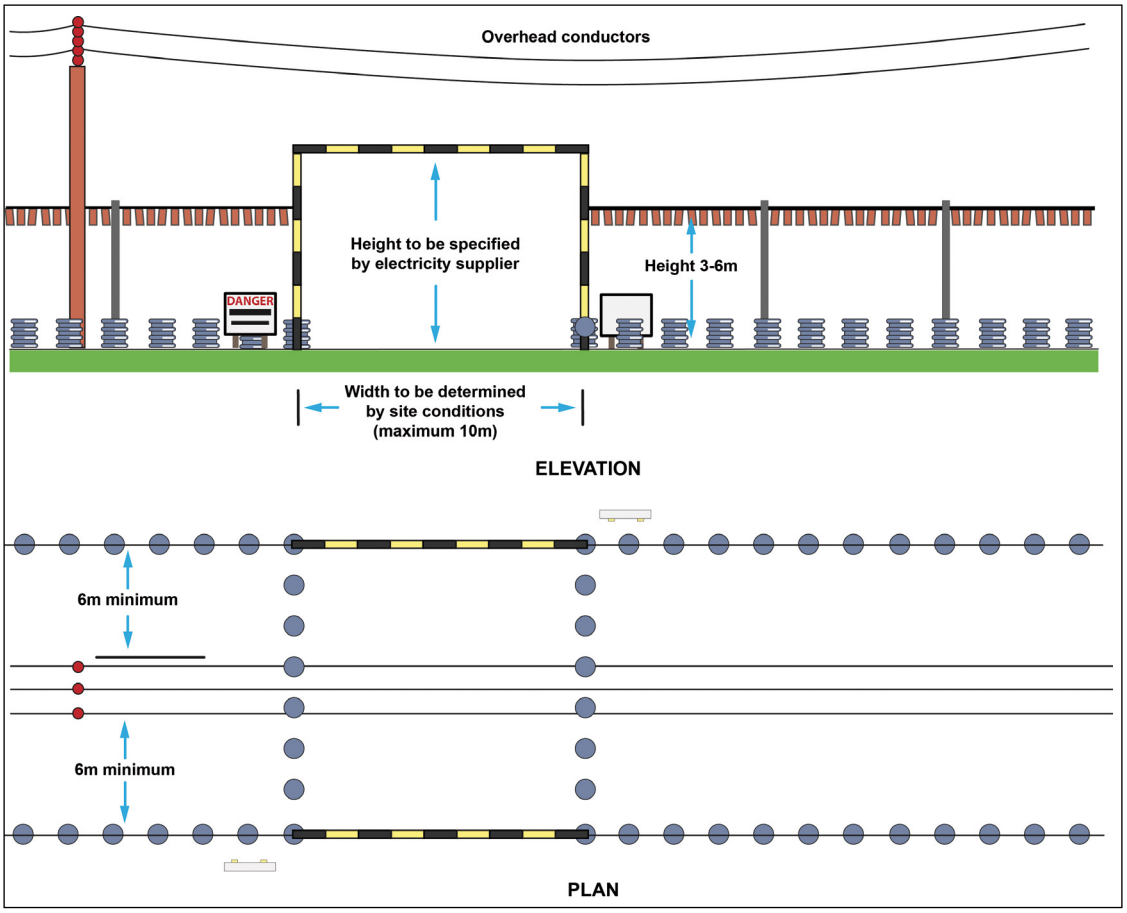
In cases in which it is probable that persons and plant might approach the power lines, the erection of suitable stout barriers will reduce the risk. It may also be necessary to place additional warnings at a lower level.

Figure 43. Ground-level barrier warning of the presence of an overhead power line.



In addition to the previously listed precautions required when working near overhead power lines, those in control of the site should consider erecting high visibility barriers at least six metres away from the power line to prevent the inadvertent approach of other vehicles. Also, if vehicles have to cross under the lines, then suitable crossing points should be established in conjunction with the owners of the lines to ensure that there is an adequate clearance between the power line and the maximum height of the marked crossing point.

Figure 44. Examples of dimensions for "goal post" crossing points and barriers.



Regular checks should be made by site management to ensure that no material is being stored between the ground barriers and the overhead power line, as workers collecting the material may/will be at risk from contacting the overhead power lines.

Workers can suffer severe or fatal injuries if they operate electrically powered machinery or hand tools that have not been correctly maintained. Construction sites, by their very nature, expose electrical equipment to harsh conditions – and all electrically operated equipment should be checked on a regular (daily) basis. Modern double-insulated tools are well protected, but the cables (power leads) are still vulnerable to damage and need to be regularly inspected.

Eliminating or reducing exposure to the hazard (electricity) is the primary risk control measure. Wherever possible, using equipment that is cordless or powered from lower voltage electrical supplies (110 volt) will reduce the risk.

Appropriately trained persons conducting visual inspections of electrical system's powering mobile electrical equipment (e.g. cement mixers) and manually operated tools (e.g. concrete breakers and drills) will be able to detect about 95 per cent of faults that increase the risk to workers using this equipment.

Those conducting the visual inspection should check that:

- No bare wires are visible;
- The cable covering is not damaged and is free from cuts and abrasions (apart from light scuffing);
- The plug is in good condition, e.g. the casing is not cracked, the pins are not bent and the key way is not blocked with loose material;
- There are no taped or other non-standard joints in the cable;
- The outer covering (sheath) of the cable is gripped where it enters the plug or the equipment. The coloured insulation of the internal wires should not be visible;
- The equipment outer casing is not damaged and all screws are in place;
- There are no overheating or burn marks on the plug, cable or the equipment;
- Trip devices are working effectively, by pressing the "test" button.

When faults are identified, the electrical equipment should immediately be taken out of service and remain so until a trained competent worker has rectified the faults.

In addition to the visual checks, all electrical equipment should be tested within a planned preventative maintenance programme, conducted by a competent worker, to guarantee that the five per cent of faults that cannot be identified through visual inspections (e.g. breakdown of insulation, loss of earthing/grounding continuity) are not present.

It is unlikely that labour inspectors will be able to examine all the electrical equipment that is being used on a construction site. It is good practice to conduct a visual inspection, checking the above matters, on a sample of the electrical equipment. In addition, the inspectors should make enquiries among those in control of the site, as well as the workers, to identify what measures are taken to ensure that the electrically operated equipment is safe. This will enable labour inspectors to form an opinion as to the risk management for electrical hazards.

Additional precautions will be required if work activities are to be conducted in areas where there is a risk of flammable vapours. It will be necessary to select electrical equipment that has been specifically designed to prevent it acting as a source of ignition due to sparks and overheating. Labour inspectors will need to ensure that, where relevant, these matters have been considered.

3.3.4.6 Other machinery/equipment hazards

A vast array of machinery and equipment is used on construction sites and it is not possible, within the confines of this guide, to cover all the risk control measures that labour inspectors will need to verify as being in place.

However, labour inspectors should check that all workers using equipment have received adequate training for the purposes of safety and health. This should include training on the methods to be used when operating the work equipment; on any risks such use might entail; and on the precautions to be taken. In other words, all workers need to know not only how to guard the machines they are using, but also why the machines need guarding and how to operate them. Written instructions on the safe use of the equipment should be available to all operators in a language they understand.

All supervisors and/or those in control of the work premises/activities should know how to guard the equipment in an appropriate manner; and they should also be aware of the safe systems of work that must be adopted when the equipment is in use.

When labour inspectors identify machinery that is being operated with guarding deficiencies, they should ensure that the deficiencies are rectified. They may also question the training and competence of workers who are prepared to operate the equipment in these unsafe conditions.

Figures 45-50 show machinery and equipment that are commonly found on construction sites. They include photographs of equipment that is unguarded and poorly maintained, thus presenting hazards that are not being effectively controlled.

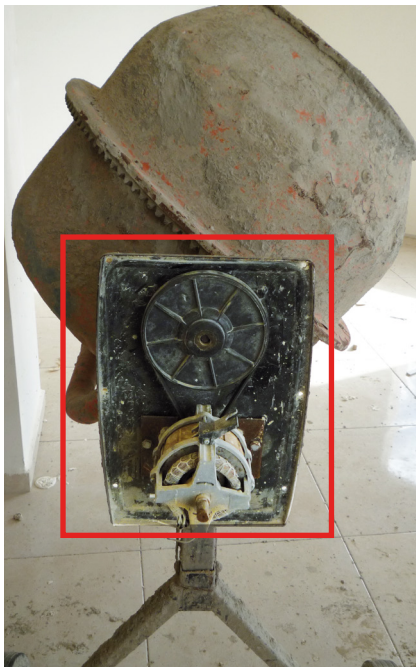


Figure 45. An unguarded drive mechanism on a cement mixer.

Figure 45 shows a cement mixer without a guard on the belt and pulley drive mechanism. The missing guard means that workers' fingers, hands or arms could become trapped between the machine's drive belts and the pullies.

Figure 46. An unguarded circular saw.

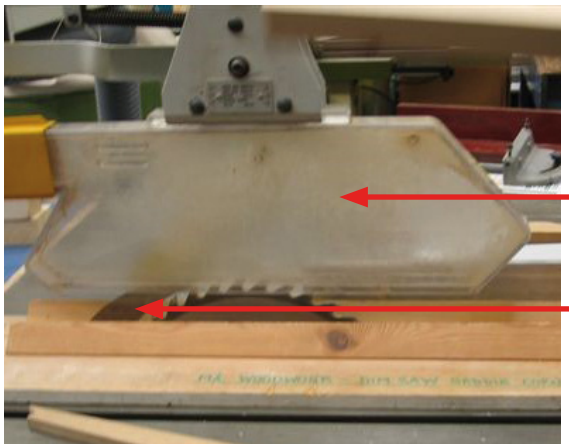


Figure 47. A correctly guarded circular saw.

Figure 46 shows a portable circular saw bench that is missing the top guard and riving knife. The top guard and riving knife, as seen in figure 47, should be present at all times as they help prevent access to the circular saw blade.

Figure 48. A poorly guarded hand-held cutter/grinder.

Figure 48 shows a hand-held cutter that is not fitted with a guard. These tools are used for cutting, grinding and polishing and should be fitted with a guard (as seen in figure 49), which prevents access to the cutting, grinding or polishing disc. It also reduces the risk if the disc fragments.

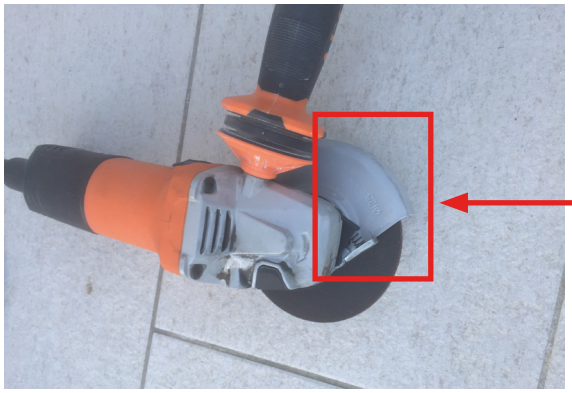


Figure 49. A correctly guarded hand-held cutter/grinder.

Figure 50. A wheelbarrow with a poorly maintained wheel bearing.

Figure 50 shows a wheelbarrow that has not been maintained. It may be noted that the wheel is badly aligned because it no longer has a wheel bearing. This will mean that the workers will have to exert more effort to move materials with the wheel-barrow, thus increasing the possibility of suffering a manual handling injury. All equipment must be maintained to ensure it functions correctly.

3.3.4.7 Slips and trips

Slips and trips are a common cause of accidents. They can also set off other incidents – for example, if a slip or trip causes a worker to lose his or her balance on an unprotected working platform, this may lead to a fall from height.

The main causes of slips and trips are:

- Having to walk over uneven ground, particularly when carrying unwieldy objects;
- Tripping over building materials or waste, which has simply been left lying around;
- Tripping over trailing cables;
- Slipping caused by wet surfaces or poor ground conditions;
- Trips caused by small changes in level.

During their site inspection, labour inspectors will need to ensure that those in control of the site have measures in place to prevent slips and trips from occurring, such as:

- Keeping the work and storage areas tidy;
- Planning deliveries to minimize the amount of materials on site;
- Ensuring corridors, stairways, footpaths and other areas used by pedestrians are kept clear of obstructions at all times;
- Having clearly designated walkways with good conditions underfoot (levelled if rutted, stoned if muddy, gritted when icy);

- When small changes of level cannot be avoided (e.g. doorways into buildings), considering the use of soundly constructed temporary ramps that can provide easy and safe access;
- Having proper arrangements for the disposal of waste materials, e.g. providing clearly identified areas where waste can be left for later collection. This is just as important for work inside buildings; consider providing wheelie bins or wheeled skips for workers to put their rubbish in;
- Keeping inside and outside work areas adequately lit;
- Paying particular attention to maintaining good conditions at the foot of access stairs and ladders;
- Ensuring everybody on site wears footwear that provides good grip;
- Using cordless tools when possible to avoid having trailing cables;
- Where cables are needed for temporary lighting or mains-powered tools, running these at high level, particularly along corridors;
- If temporary coverings are used to protect finished floor surfaces, make sure these do not create a risk of slipping or tripping;
- Using mechanical plant to move materials to storage areas that are convenient to where they will be used. This will reduce the need to carry objects over poor ground;
- Making sure that steps leading to site cabins are properly constructed;
- Making sure everyone knows what they have to do to manage their own materials, waste and equipment to keep the site tidy and reduce the risk of tripping.

3.3.4.8 Health hazards and associated health risks

Hazards that give rise to safety risks to construction workers have been recognized for some time and, in many countries, employers and workers are initiating control measures to reduce the risk of occupational accidents. However, the same does not hold true in the case of exposure to hazards that increase the workers' risk of contracting occupational diseases. This may be due to the hazard's lack of visibility, or in some cases due to a lack of knowledge about the hazard and its associated risks.

The main dangers to health in construction are:

- Musculoskeletal disorders: back and other muscle and joint injuries (see section 3.3.4.4 – Moving materials/goods safely);
- Dermatitis: redness and inflammation of the skin related to exposure to hazardous substances such as cements and solvents;
- Respiratory diseases due to the inhalation of dangerous substances, e.g. respirable crystalline silica (RCS);
- Noise-induced hearing loss: deafness or ringing in the ears caused by exposure to high levels of noise;
- Hand-arm vibration syndrome: pain and numbness in the fingers and hands caused by the use of vibrating tools;

- Heat stroke: exposure to high temperatures, especially in some regions during the summer months; and
- Stress caused by high workloads and excessive working hours to meet tight deadlines.

Workers may be exposed to hazardous substances that they are actually using – such as solvents and cement; or they may be exposed to substances that are a by-product of an activity that is being carried out. Examples of the latter include exposure to stone dust generated as a result of cutting or polishing operations; exposure to lead as a result of sanding down surfaces that were previously painted with lead-based paints; or exposure to welding fumes produced by welding operations.

Labour inspectors should ascertain whether employers have identified any hazardous substances to which workers are being – or are likely to be – exposed; if so, they should be asked what control measures they have put in place to reduce the risk. Labour inspectors should verify that any control measures identified as required are in place and are being used; and confirm that the workers are aware why the precautions are necessary. Workers who have been informed about the dangers of exposure to these hazardous substances are more likely to use the required control measures.

Workers' exposure to hazardous substances is either as a result of inhalation – breathing in the substance, e.g. fumes, dust or vapour; absorption – through direct contact with a substance, e.g. via the skin or cuts and abrasions; or ingestion – swallowing or eating something that has become contaminated.

While conducting the site visit, labour inspectors may identify workers who are carrying out activities in dusty or fume-filled environments. If this is the case, it is likely that they are being exposed to substances that are hazardous to health, and continued exposure may result in an occupational disease. Labour inspectors should identify the substance to which the workers are being exposed, and identify what control measure should be in place.

Workers involved in dust-generating construction activities are likely to be exposed to respirable crystalline silica (RCS). RCS is one of the substances with the highest respiratory health risk to construction workers. It is found widely in stone, rocks, sands and clays, and workers engaged in the cutting, breaking, crushing, drilling, grinding, or abrasive blasting of these materials are likely, if no control measures are in place, to be exposed to levels of RCS that could lead to serious health effects such as silicosis, chronic obstructive pulmonary disease and lung cancer.

In October 2016, the European Commission's Senior Labour Inspectors' Committee produced a document entitled: *Guidance for National Labour Inspectors on addressing risks from worker exposure to respirable crystalline silica (RCS) on construction sites.*[27] Part 2 of this document provides information on control measures that could be used for specific operations to reduce exposure to RCS, thereby reducing the risks to workers.

In the case of a product that has been purchased, the manufacturer's product information sheet should provide employers, workers and labour inspectors with information regarding the risk generated by inhaling the substance or being in direct contact with it. The information sheet may also suggest the risk control measures that may be used. In relation to chemicals, containers should be correctly labelled.

[27] Available at: https://osha.europa.eu/en/guidance-national-labour-inspectors-on-addressing-risks-from-worker-exposure-to-respirable-crystalline-silica

In controlling the risks caused by substances hazardous to health, labour inspectors should ensure that employers have followed the hierarchy of risk control measures, namely:

- Elimination: e.g. remove the hazard and/or exposure to the substance;
- Substitution: e.g. replace the material or process with a less hazardous one;
- Engineering controls: e.g. prevent access to the hazard;
- Administrative controls: e.g. identify procedures/instructions to work safely, supervisory methods;
- Personal protective equipment: use when all the above measures have been found to be ineffective.

Labour inspectors should ensure that employers have followed this hierarchy by first identifying whether exposure to the hazardous substance might have been prevented, either by removing the substance or using a less hazardous substance. In cases in which the hazardous substance is a by-product of the activity being carried out, its presence is more difficult to prevent and engineering controls may be required to reduce exposure. For example, it might be worth considering whether dust extraction or dust suppression equipment might be used.

Administrative controls do not remove the hazard – but they limit or prevent exposure to it usually resulting in a reduced risk. These might include: reducing the time workers are exposed to hazards (e.g. by job rotation); prohibiting the use of mobile phones in hazardous areas; increasing safety signage; extending employee training; and limiting the numbers of persons exposed to the hazard by excluding workers who are not involved in the work.

Health surveillance can also be a form of control measure, provided that it is carried out on a regular basis and used to check for early signs of illness. Health surveillance is also used to ensure that control measures are effective in preventing workers from contracting diseases; but its purpose is not to confirm the diagnosis of a disease. In some cases, national legislation may determine when health surveillance has to be conducted – and this may even be a requirement before workers start work. The labour inspectors should be aware of this.

PPE as a control measure should only be considered as a last resort, when it has been ascertained that the hazard cannot be controlled by any combination of the other control measures. Engineering controls provide collective protection; for example, if dust is collected at source, workers will not be exposed to it. However, reliance on PPE implies that only the worker wearing it will be protected.

It goes without saying that wearing PPE in some specific circumstances may be the most suitable option for preventing exposure to a hazard. For instance, providing waterproof footwear to workers involved in pouring concrete will prevent their feet/lower legs from coming into contact with the cement and suffering caustic burns.

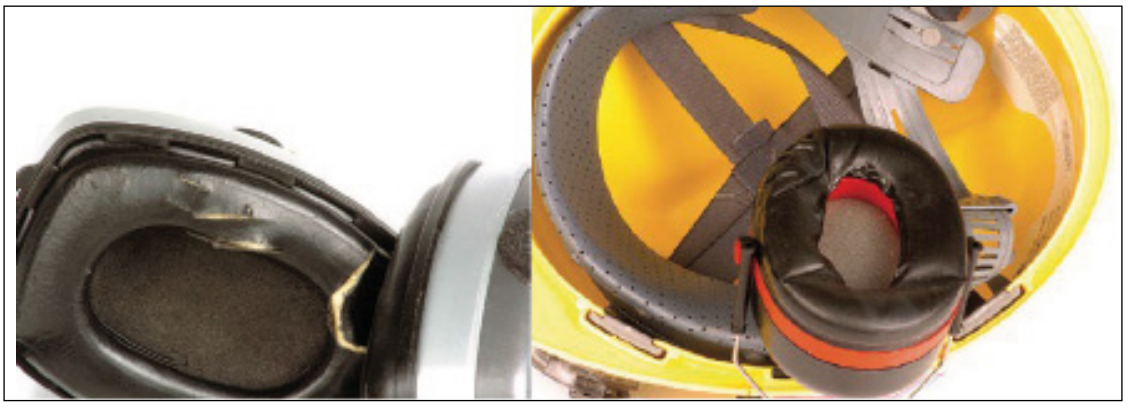
Labour inspectors should ensure that the PPE that has been selected and being used provides the correct level of protection. Reference to the manufacturer's information should help in this respect. Labour inspectors may wish to control the standard of respirators; a dust mask may not protect against vapours and vice versa. They should also check filters on other face masks to ensure that they are the correct standard and not being used after their expiry date. Labour inspectors will also need to ensure that the PPE is suitable for the worker; if a worker has facial hair, face masks are unlikely to provide a sufficient level of protection as an effective face seal cannot be formed.

It is also good practice for employers to involve workers in the selection of the PPE, as this will help to ensure that they wear it.

It is essential that workers expected to wear PPE have been informed of the dangers of being exposed to the hazard in question, and that they have been trained how to wear, maintain and store this equipment.

Labour inspectors may ask workers why they believe they need to wear the PPE, thus making sure that they are aware of the risk. They will also need to check that the PPE is well maintained and that storage facilities are available for it. Poorly maintained PPE, for example ear defenders that have split or damaged seals (figures 51 and 52), will not provide the desired level of protection. Furthermore, if PPE is stored in a dirty environment it may become contaminated – and even increase the workers' exposure to hazardous health substances.

Figures 51 and 52. Hearing protection with split and damaged seals.



The longer that workers are exposed to noise and the higher the noise level, the more probable that they will suffer noise-induced hearing loss. If they work in an area or use equipment that obliges them to shout when they wish to communicate with someone who is only two metres away, the level of noise exposure is likely to damage their hearing. The noise on construction sites usually comes from machinery – especially that used for demolition – ranging from compressors, concrete mixers and cartridge-operated tools, i.e. nailing guns.

When labour inspectors identify these circumstances, they should ascertain what measures those in control of the site have considered to reduce the risks to workers.

For example, they should enquire whether all the equipment has been well maintained. Well-maintained equipment is normally quieter. They might ask a number of questions. Could the job be completed in a different manner, potentially with different equipment? Did those in control of the site consider obtaining quieter equipment when obtaining the equipment, or think about controlling the noise at source – such as fitting mufflers to exhaust systems and/or directing exhaust systems away from work areas? Could work be organized in such a way as to reduce the numbers of workers being exposed to noise?

If it is not possible to eliminate noise at source, labour inspectors, in accordance with national legislation, will need to ensure that workers have been provided with hearing protection. Labour inspectors should also make sure that workers have been informed of the dangers generated by the noise levels to which they are being exposed, and that they have been trained how to use the PPE.

Workers on construction sites often use hand-held power tools and the vibration from this equipment can cause hand-arm vibration syndrome (HAVS). This affects workers' fingers,

hands and arms and, in the long term, causes permanent damage. The likelihood of suffering from this disease is directly related to exposure. The more workers are exposed to vibrating tools the more likely they are to suffer from HAVS.

Typical tools used in construction that result in high levels of exposure to vibration are: road and concrete breaking drills; concrete vibro thickeners and concrete pokers; plate vibrators; chisels (air or electric); compressor guns; pneumatic and percussive drills; angle grinders; sanders and other similar "rotary" tools; abrasive wheels; cutting-off wheels and discs and power hammers and chisels.

When labour inspectors identify workers using these tools, they should ascertain whether any controls are in place to prevent or reduce workers' exposure. National legislation may also require that workers' exposure be assessed.

Again, the following questions should be asked. Have those in control of the site considered whether the job might be done using other equipment that will not expose workers to vibration – for example could other powered plant be used? Are those in control of equipment ensuring that is has been well maintained? Are blades/cutters changed when they are worn out? Maintenance will ensure that equipment remains properly balanced, and sharp blades and cutters will allow the job to be completed in the shortest possible time, thus reducing exposure.

Workers who keep their hands warm by wearing gloves, massaging their fingers and having hot food and drinks, will guarantee that there is a good blood flow into their fingers, and this helps to reduce the risk of the disease. Not smoking is also recommended as it can narrow the blood vessels.

Inspectors should also verify what controls the site management has in place to reduce the risk of heat exhaustion – when workers become very hot and start to lose salt and water from their body, which can have health repercussions and even cause heatstroke; and heatstroke – when the body temperature rises above 40 degrees centigrade, putting a strain on the brain, heart, lungs, liver and kidneys, which can be life-threatening. Suitable controls could include: banning outside work when the temperature or humidity rise above a certain level, or at specific times of the day (this may be defined by national legislation); ensuring that sufficient welfare facilities are provided in the shade, and possibly with air conditioning; allowing regular rest periods; and providing a sufficient supply of drinking water with unrestricted access.

Inspectors should also ascertain whether any risk control measures are present to reduce the risk of work-related stress. Such controls could include: organizing working time and shift rotation; avoiding excessive overtime and workloads; and ensuring that deadlines are realistic.

3.4 Matters to be addressed during the inspection of working conditions

In many countries, violations of labour rights are most frequently found on construction sites. The importance of inspection visits to these sites is twofold: they should focus on working conditions to monitor, inter alia, compliance with legislation on wages, working hours and child labour, but also take into account that poor working conditions have direct repercussions on occupational safety and health and may trigger work accidents or contribute to diseases.

Undeclared and irregular workers in precarious jobs are more accident-prone. They are more willing to accept hazardous work to keep their jobs and they tend to be less informed on the hazards to which they are exposed and on control measures – due to the fact that employers may consider them as a non-core "disposable" workforce. Migrant workers, especially if they are in an irregular situation, may face problems of communication with other workers and have difficulties understanding the exact meaning of instructions received from their supervisors, or they may be unable to read safety information. Excessive and irregular working hours, particularly at night, take their toll on workers in terms of tiredness, lowering their level of attention to the risks they face. The interrelation between social conditions of work and occupational safety and health justifies that, whenever possible, the Labour Inspectorate should adopt an integrated or systemic approach to working conditions, deploying multidisciplinary teams to the construction site. If this is impossible, it should at least equip inspectors with a basic level of knowledge, so they are able to report to specialists on any issue they have identified during their visit that might require further investigation.

The issues examined during the inspection visit will depend upon the main purpose of the visit. Generally speaking, the first step is to check the employment relationship itself and to determine who is providing the work to whom. This is vital as the nature of the relationship between the worker and the employer places differing duties with regards to the legislation on the employer, worker – or both. Once the relationship has been identified, labour inspectors should be able to identify what is required of both parties to comply with national legislation. In many cases, the existence of an employment relationship will have to be established. This may occur when workers are falsely declared as "own-account" workers to avoid paying social contributions and applying the labour law.

When verifying matters relating to working conditions, labour inspectors will have discussions with employers, workers and any other person who might provide relevant information for the purpose of the inspection. They should ensure that, when necessary, any discussions with the workers are conducted without the employer or their representative being present, so that the workers feel at ease and can speak freely without the fear of any potential retaliation. Statements from workers should be cross-checked with any available documented evidence and other testimonies.

Labour inspectors should also attempt to speak to a sufficient numbers of workers so that the employer is unable to identify which worker provided specific information, thereby avoiding any possible comeback.

3.4.1 Identification of employer/s

Identifying the relationship between workers and employers is one of the many challenges labour inspectors face when inspecting construction sites. In many cases, workers themselves do not know exactly for which enterprise they work, especially when they stay for short periods on site and were recruited by external parties. Employment relationships are often disguised, and it is unclear who in the chain is the employer. This information should be collected, if possible, before commencing the inspection visit by checking social security registries and others.

When starting the visit, labour inspectors should request the daily record of workers on site, and confirm with management who is working for each subcontractor; they should ask for confirmation of the nature of the contractual relationship, as well as the individual worker's date of entry, occupation, and social security status. This information should be cross-checked with workers when conducting the visit. Visits aimed at tackling undeclared work will often control access to and exits from the site.

This information is important not only to address undeclared work but also those cases in which, according to national legislation, there is joint liability for compliance with national legislation, including occupational safety and health laws, amongst contractors and subcontractors.

3.4.2 Employment relationships

When conducting an inspection visit, it is important to establish who is considered a "worker" in the employment relationship, who is the "employer" and who is an "independent/own account worker". Laws governing employment relationships vary from country to country. Irrespective of this, the determination of the existence of an employment relationship should be determined primarily by the reality of the facts relating to the performance of work and the remuneration of the worker, notwithstanding how the relationship is characterized in any contrary arrangement, contractual or otherwise, that may have been agreed between the parties.

Labour inspectors will usually look for indicators of subordination or economic dependency provided by national law or jurisprudence. The ILO Employment Recommendation, 2006 (No. 198),[28] suggests some indicators that may provide guidance to labour inspectors, although these will have to refer to elements of the national legal system.[29]

These indicators might include:

a) The fact that the work:

- Is carried out according to the instructions and under the control of another party;
- Involves the integration of the worker in the organization of the enterprise;
- Is performed solely or mainly for the benefit of another person;
- Must be carried out personally by the worker;
- Is carried out within specific working hours or at a workplace specified or agreed by the party requesting the work;
- Is of a particular duration and has a certain continuity;
- Requires the worker's availability; or
- Involves the provision of tools, materials and machinery by the party requesting the work;

b) Periodic payment of remuneration to the worker:

- The fact that such remuneration constitutes the worker's sole or principal source of income;
- Provision of payment in kind, such as food, lodging or transport;
- Recognition of entitlements such as weekly rest and annual holidays;
- Payment by the party requesting the work for travel undertaken by the worker in order to carry out the work;
- Absence of financial risk for the worker.

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[28] Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:R198

[29] For information on labour inspection national practices for determination of the employment relationship see: Bignami et al: *Labour inspection and employment relationship, Working Document No. 28, LAB/ADMIN (Geneva, ILO, 2013).* Available at: http://www.ilo.org/labadmin/info/pubs/WCMS_217603/lang--en/index.htm

A simple procedure to identify employment relationships may consist of:

- Counting the workers in an initial visual overview, in order to roughly calculate the average number of persons present at the workplace;
- Asking the site guard for the list of site entrances;
- Collecting the individual timesheets (if they exist) in order to check the actual number of workers and their working times as documented;
- Documenting the identity of all workers by viewing their national identity card or equivalent;
- Interviewing all workers, and obtaining information about the following (to be compared with the information provided by the employers):
  - Their employer (labour inspectors will ask who pays the worker's wages or who gives orders to the worker, as in many cases the answer reveals who the real "employer" is – or the person for whom a given supervisor works);
  - Their age (essential when there is a possible case of child labour);
  - The starting date of their labour relationship (when they began working for the employer);
  - Their professional category (work carried out by the worker);
  - Their wages and the payment intervals (daily, weekly, monthly);
  - Their working hours, daily/weekly (overtime, periods of rest, holidays…).
- Collecting and recording their data, even if the workers declare they are self-employed, so that this can be compared with the reality of the facts;
- Searching – once all the clearly visible workers have been identified – for possible employees in hidden areas, such as changing/locker rooms, kitchens, toilets/bathrooms, resting areas, patios, machinery rooms, stock rooms, etc., always followed by the firm's representative. If access is denied, the labour inspectors must refer to the law granting their access; if the employer denies access once again, the labour inspectors must follow the Inspectorate's procedures with regard to this matter. This may involve issuing an obstruction notice and serving it on the employer or asking the police force for assistance.

Having identified all the workers on the construction site and collected their statements, the labour inspectors will have to compare the information obtained against documental evidence, such as individual employment contracts, any proof of payment, declarations to social security, insurances, etc. (this examination may be done later, at the end of the inspection visit, or even at the inspector's office) to ensure that all contractual obligations are being fulfilled.

3.4.3 Type and content of the employment contract

The employment contract shall be in compliance with the mandatory rules prescribed for under the current national law, valid at the moment of signing the contract or established by other normative legal acts (imperative norms).

Most legal frameworks have rules guiding employers on the type of labour contracts admissible for different situations, such as temporary work contracts, short-term contracts, and others. Labour inspectors will verify if the contract signed between the parties corresponds to the legal requirements in terms of nature, duration, renewal, and minimum written content.

Again, depending on the national legislation, the usual references found on labour contracts are the following:

- Full identification of the worker;
- Full identification of the employer;
- Structural division (if available);
- Exact date of signature of the contract and commencement of work (these may not correspond);
- The title of the position and/or working function (professional category);
- Description of functions;
- The salary and/or the method of its calculation;
- Supplementary payments and any subsidies or entitlements paid to the worker in the prescribed manner;
- Term of validity of the employment contract (as necessary);
- In case of a probation period, its stated duration and terms of the probation period;
- Working time;
- The type of annual leave (minimal, additional, extended) and duration;
- Position, name and family name of the person who signed the legal act.

3.4.4 Workers' representation rights

There is no "one-size-fits-all" model across countries of the labour inspection service's role to uphold freedom of association. Its role changes according to variables and national or regional situations, which affect not only the structure and functions of the labour inspection system itself but also the legal framework of freedom of association and the right to collective bargaining.

Nonetheless, it is clear that the labour inspection service, by virtue of its own powers and functions, is expected to play an active role in this area – implementing, in the workplace, some basic routines and inspection procedures. These include:

- Verifying the existence and functioning role (free from discrimination) of:
  - Workers' representatives;
  - Bipartite committees;

  and the absence of any form of discrimination against workers with respect to freedom of association.
- Providing technical advice to workers' representatives (and to the employer) about their duties and rights, and about those technical aspects that could be controversial in the workplace;
- Being accompanied by a workers' representative and an employer's representative for all or only part of the visit;

- Taking into account comments made by the workers' representatives, and informing them of their findings and actions relating to the inspection;
- Bringing immediately to the competent authority's attention any fact that constitutes, in his or her judgment, an anti-union practice.

3.4.5 Pay (salaries and wages)

An important aim of inspection visits in construction sites is related to the enforcement of wages legislation or applicable collective bargaining agreements. Labour inspectors check if the amount, periodicity and means of payment of remuneration correspond to the terms of the individual labour contract and the legal requirements:

- Inspectors will compare workers' payslips with their timesheets, to ensure that they are receiving the correct hourly rate and the rate that is stipulated in the workers' contract, the law and/or the collective bargaining agreement.
- Labour inspectors will also monitor practices of discrimination in terms of remuneration. They will look for possible violations of the principle of equal remuneration for men and women workers for work of "equal value", or any other discriminatory treatment defined under national legislation – such as nationality, race, colour, religion, political opinion or social origin. The inspectors will analyse whether different payment rates apply to certain categories of workers, for example apprentices.
- Labour inspectors will often check if workers were informed of the terms and conditions applicable to their wages before entering employment, and if they know the details concerning the rates of wages payable, the method of calculation, the timing of wage payments, the place of payment, and the conditions under which deductions can be made. They also assess if wages are paid in legal tender, and if allowances in kind, when admissible, do not exceed the legal limits and criteria established by law.
- It is equally important that labour inspectors should check the proper application of the national legal limits for each type of wage deduction (e.g. income tax or social security contributions) in a proportion of wage/payslips, bearing in mind that a full check of every payslip may be required in certain circumstances – for example, following specific complaints or during campaigns/investigations etc.

3.4.6 Notification of wages

Workers have to be informed, with each payment of wages, about the details relating to that specific pay period, and employers are usually required to maintain records showing the necessary information for each worker. This is commonly done by providing payslips to workers and employers keeping records of the payslips.

Although the situation may differ from country to country, payslips should contain full wage details such as:

- Total wages paid for the pay period;
- The basis on which wages are paid;
- Date of payment and the pay period covered;

- All additions to or deductions from the worker's wages;
- Total overtime earnings;
- Total hours worked for the pay period; and
- Payment method (cash, cheque, or bank transfer).

Labour inspectors will find it useful to examine these records to ensure that minimum wages are being paid in accordance with the terms and conditions of contracts, national legislation, and collective bargaining agreements.

3.4.7 Working hours, rest periods and overtime

Working time is a central component of employment contracts and details should be agreed before work commences. When assessing if work is organized within the normative parameters, labour inspectors will pay attention to the:

Quantitative aspects of working time:

- Daily and weekly hours of work;
- Overtime (and its compensation); and
- Rest periods (daily rest periods, time off between shifts, weekly or bi-weekly rest periods, holiday arrangements).

Qualitative aspects of working time:

- Organization of hours of work:
  - Shift work;
  - Night work;
  - Flexible hours;
- Part-time work.

Inspecting working time will require inspectors to look into time schedules, cross-checking them with the chronogram of operations on site and the estimated number of the workforce required, the site access and exit logs, and interviews with workers.

In the event of any suspicion of irregular overtime (exceeding legal limits, workers not being paid or declared), inspection visits should be conducted after regular working hours.

3.4.8 Employment of young persons or children

According to the ILO Minimum Age Convention, 1973 (No. 138), the minimum age for admission to any type of employment or work which, by its nature or the circumstances in which it is carried out is likely to jeopardize the health, safety or morals of young persons, shall not be less than 18 years.[30]

[30] Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312283:NO

Other international standards further emphasize this point, stating that effective measures shall be taken to secure the prohibition and elimination of the worst forms of child labour, including "… work which, by its nature or the circumstances in which it is carried out, is likely to harm the health, safety or morals of children".[31]

Construction work is frequently highly labour-intensive. Very often, workers are exposed to harsh working conditions and tough physical labour. Indeed, this type of work is, by its nature or the circumstances in which it is carried out, likely to jeopardize the health of young persons.

Child labour is a violation of fundamental human rights and has been shown to hinder children's development, potentially leading to lifelong physical or psychological damage; it cannot be condoned under any circumstances. As such, any evidence of child labour during an inspection visit should be properly addressed:

- In the event that inspectors suspect that a site is using child labour, they will have to gain quick access to the site and concentrate on unearthing the evidence. This will probably be concealed, with the children or young workers hidden;
- When verifying the issue of the minimum age of workers on site, the inspectors will normally request to see identity documents. In order to obtain all the relevant information from the workers themselves, they will have use specific communication skills to persuade young workers or children to be cooperative;
- When the labour inspectors determine the presence of children at work or the exposure of workers below the minimum age to hazardous working conditions, they should immediately order that those concerned be removed from work – subject to the national legislation – and follow up the case with the appropriate institutions to prevent their return to work.

3.4.9 Migration and employment of foreign nationals

In many countries, migrant workers account for a large percentage of construction workers. They are often more vulnerable than other workers, as they may not share the same culture, speak or correctly understand the national language, or be tied to an employer by visa requirements.

Labour inspectors should be aware of the special vulnerabilities of these workers and adapt the intervention to their special needs. In the case of a large construction site with many migrant workers, the Labour Inspectorate should ensure that:

- Selected inspectors are able to communicate with the workers in languages of common understanding;
- The informative materials distributed on site are translated; and
- The inspectors are aware of any cultural differences that may require them to adapt the way they interview or interact with the workers.

The main purpose of controlling the status of workers in a given country is to guarantee the protection of workers' rights and not to enforce immigration legislation. However, in

[31] ILO Worst Forms of Child Labour Convention, 1999 (No. 182). Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312327:NO

their capacity as civil servants, inspectors will be required in most countries to report undocumented migrant workers to the immigration authorities.

Although forced labour[32] may exist independently of nationality and status in the country, labour inspectors should pay special attention to the possible signs of forced labour and human trafficking.[33]

These indicators will include the following:

- Physical violence;
- Restriction of freedom of movement;
- Threats;
- Debt servitude and other forms of bondage;
- Withholding or non-payment of wages;
- Retention of identity documents.

Labour inspectors will also look into information on any recent incidents or cases concerning the use of forced labour.

In addition to identifying and informing the appropriate authorities of forced labour cases, labour inspectors should be aware of the rights applicable to victims of human trafficking. These include the right to be fully informed about possible options for cooperation with the national authorities; eligibility to stay in the country – at least while necessary for the prosecution of the perpetrators; and the right to be informed about the compensation of employment entitlements.

3.4.10 Social security

Generally speaking, more than one government department is involved in social security supervision. With regard to inspection functions, there are two main mechanisms to control compliance with social security legislation: labour inspection and the social security system itself. It is important to establish cooperation and collaboration between these two mechanisms.

On-site inspection visits and employers' auditing documents are used to control compliance with social security, and both are important tools for detecting undeclared work and social security fraud. There are two main fields of action for labour inspectors in the area of the social security:

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[32] According to Article 2 of the ILO Forced Labour Convention, 1930 (No. 29), "...the term **forced or compulsory labour** shall mean all work or service which is exacted from any person under the menace of any penalty and for which the said person has not offered himself voluntarily". Available at: http://www.ilo.org/dyn/normlex/en/f?p=1000:12100:0::NO::P12100_ILO_CODE:C029

[33] Human trafficking is defined by the *Protocol to Prevent, Suppress and Punish Trafficking in Persons Especially Women and Children, supplementing the United Nations Convention against Transnational Organized Crime* as: "The recruitment, transportation, transfer, harbouring or receipt of persons, by means of the threat or use of force or other forms of coercion, of abduction, of fraud, of deception, of the abuse of power or of a position of vulnerability or of the giving or receiving of payments or benefits to achieve the consent of a person having control over another person, for the purpose of exploitation. Exploitation shall include, at a minimum, the exploitation of the prostitution of others or other forms of sexual exploitation, forced labour or services, slavery or practices similar to slavery, servitude or the removal of organs", (Article 3a).

a) A very common labour inspection function in many countries is the control of the registration of workers in social security systems, and of the regular payment of social contributions by workers and employers – when they are related to the employment relationship. This control is a very effective measure to prevent fraud in the fight against undeclared work.

When implementing this function, labour inspectors should verify:

- Registration of the company with the social security institution;
- Registration of workers by the employer with the social security institution;
- Registration of self-employed workers with the social security institution;
- Payment of the workers' contributions;
- Payment of the total contribution by the employer or the self-employed worker.

b) Another typical function is the role of labour inspectors in relation to specific employment injury benefits. In cases in which inspectors carry out an investigation of working accidents and/or occupational diseases, the conclusions of the investigation may be the basis for:

- Determining responsibilities in the case of the accident/sickness investigated;
- Proposing extra contributions for companies with a high record of non-compliance with standards.

3.4.11 Qualifications and training

Workforce qualification and training are key elements in determining a worker's suitability for a given activity. There should be a linear correlation between a worker's qualifications, the professional category stipulated in the labour contract and the real activity performed by the worker (The ILO Human Resources Development Convention, 1975 (No. 142)[34] requires member States to develop policies and programmes of vocational training sufficient to take due account of employment needs).

In addition to being a legal obligation in many countries, ensuring an adequate workforce qualification and training system is one of the most effective ways of preventing accidents, diseases and unsafe systems of work. Specifically, Convention No. 155 obliges undertakings (employers) to ensure that there are arrangements for workers and their representatives to be given the appropriate information and training in OSH.

- Labour inspectors should inspect the relevant certificates when formal skills certification is a requirement. They should check their validity and ensure that their scope covers the activity in question;
- Labour inspectors evaluate the appropriateness and effectiveness of training material and procedures by observing individuals in the workplace. They should check that the enterprise has a system for evaluating the effectiveness of any training;

[34] Available at: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312287:NO

- Labour inspectors will also need to verify that supervisors are competent (have the skills, qualifications and experience) to plan and organize construction operations.

If national legislation requires contractors to have specific competences, the labour inspectors should be aware of these requirements and verify that they are being observed – provided this falls within their mandate. This may be achieved by viewing all licences and certificates, ensuring that those in control of the work site have obtained copies.

3.4.12 Equality of opportunity and treatment (non-discrimination)

According to the ILO Convention on Discrimination in respect of Employment and Occupation (No. 111, 1958), and its accompanying Recommendation (No. 111),[35] all persons should, without discrimination, enjoy equality of opportunity and treatment concerning:

- Access to vocational guidance and placement services;
- Access to training and employment of their own choice on the basis of individual suitability for such training or employment;
- Advancement in accordance with their individual character, experience, ability and diligence;
- Security of tenure of employment;
- Remuneration for work of equal value;
- Conditions of work including hours of work, rest periods, annual holidays with pay, occupational safety and occupational health measures, as well as social security measures and welfare facilities and benefits provided in connection with employment.

Labour inspectors are often also responsible for enforcing the national legislation that explicitly prohibits direct and indirect discrimination based on race, sex, colour, religion, political opinion, national extraction and social origin, with respect to all aspects of employment and occupation, and covering all workers.

To supervise compliance with national legislation on equality of opportunity and treatment – and provided it falls within their mandate – labour inspectors will consider:

- Quantitative data (situation of lack of equality); significant imbalances or inequalities may be apparent after a relatively simple mathematical analysis;
- Qualitative data (procedures, actions, criteria, practices of the company and documentary analysis); the inequalities or imbalances reflect the conduct of the employer's management:
  - In relation to access to employment: recruitment, contracting and previous training processes;
  - In relation to determination of job categories: formal or informal systems for assessing jobs and for determining the salary for each post;

[35] ILO Convention on Discrimination in respect of Employment and Occupation (No. 111, 1958), and its accompanying Recommendation: http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO::P12100_ILO_CODE:C111 and http://www.ilo.org/dyn/normlex/en/f?p=NORMLEXPUB:12100:0::NO:12100:P12100_INSTRUMENT_ID:312449:NO

- In relation to pay: the pay policy as a whole, underlining non-statutory pay (salaries not determined in an agreement);
- In relation to promotion: promotion procedures and other types of promotions, as well as access to life-long training;
- In relation to the incidence of temporary contracts: recruitment practices linked to the activity and the type of job and the incidence of part-time work, types of contracts.

- Acceptable and inadmissible justifications; suitability, necessity and proportionality are the elements to take into account when analysing the facts resulting from the quantitative and qualitative data. "Acceptable" means that the practices must meet the clear and justified production needs of the company, developed within the legal framework. Practices that are simply expedient, convenient, arbitrary or illegal would be discriminatory.

3.5 Closing the inspection

Once the inspection of the working conditions on the site and the examination of documentation have been completed, inspectors should hold a closing meeting and discuss, with both employers' and workers' representatives, matters that have been noted as a result of the inspection. While it is normal that matters requiring action to improve compliance with legislation are discussed, it is also good practice for labour inspectors to report to employers' and workers' representatives matters that were noted to be in compliance with legislation.

The closing meeting provides the opportunity for an open discussion and should not become a confrontation. The inspector has to balance the dual functions of enforcing the law and providing advice and information. The inspector will need to clearly state what needs to be done to ensure compliance with national legislation and what time frame for the actions will be permitted. Labour inspectors may also wish to advise that they will conduct a follow-up visit within a predetermined time frame to verify that actions have been taken. The inspector will also inform, if possible, of any enforcement action to be taken, unless further investigation will be required after the visit – such as an assessment of labour contracts and payment logs – before a decision can be taken. Before leaving the site, all contractual relationships between contractors and subcontractors should be clear for effects of direct and joint liability.

In some instances actions will be required immediately – and in others more time will be given. Labour inspectors must provide information to those at the meeting as to whether any enforcement action is proposed to ensure that the employers and/or workers fulfil their obligations. National legislation will define the actions open to labour inspectors, and the Labour Inspectorate's policies may also define expected actions. These matters are raised in section 3.5.1.

Labour inspectors must show good judgment and communication skills – both during and at the end of the visit; and their ability to summarize the main findings of the visit is paramount. If well done, this will convey the importance of any remedial action required and gains the employer's and the worker's commitment to taking such action.

The aim of the closing meeting is for labour inspectors to:

- Summarize the general standard of working conditions on the construction site, emphasizing what is satisfactory, but clearly pointing out what needs improvement to ensure compliance with the law;
- Discuss any unlawful conditions observed, outlining all apparent violations and possible legal consequences;
- Propose priorities for improving working conditions and the working environment;
- State any measures which have to be implemented without delay;
- Inform the employer of the period allowed for implementing other measures;
- Inform those present of the role and purpose of labour inspection, indicating the services it can provide to the employer and the workers; and
- Inform on any enforcement action that is to be taken.

3.5.1 Determining action to take

National legislation will determine what actions are available for labour inspectors to take. However, they should be empowered to take steps with a view to remedying defects in plant, equipment, layout or working methods, which they have reasonable cause to believe constitute a threat to the health and safety of workers. Nevertheless labour inspectors will have discretion as to whether warnings and advice are given or enforcement action is taken against persons violating legal provisions.[36]

Whilst the above matters are important, it is equally important to the Inspectorate that, amongst other things, the inspector's actions are consistent and proportional to the risks. Inspectorates may document their enforcement policy,[37] and these policies and statements[38] may or may not be publically available.

The actions available for labour inspectors usually range from:

- Providing verbal advice;
- Providing written advice;
- Issuing improvement notices detailing action required within a certain time frame;
- Issuing stop/prohibition notices requiring the immediate cessation of a work activity where there is an imminent serious threat to workers' safety or health; in some countries, these might involve removing immediately children from work, or stopping the activities due to the discovery of undeclared work;
- Imposing sanctions such as fines, or referring the case to court for criminal liability prosecution; and
- Imposing ancillary sanctions, such as the deprival of the right to compete in public tenders, the revocation of licence, or the public disclosure of offenders through the media or institutional websites.

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[36] Articles 13 and 17 of Convention No. 81.

[37] Further information is available in: *A tool kit for labour inspectors: A model enforcement policy; A training and operations manual; A code of ethical behaviour (Budapest, ILO, 2016),* available at: http://www.ilo.org/wcmsp5/groups/public/---ed_protect/---protrav/---safework/documents/instructionalmaterial/wcms_110153.pdf

[38] Example of an enforcement policy statement at: http://www.hse.gov.uk/pubns/hse41.pdf

The degree of risk is an important factor in determining what action labour inspectors will take, as demonstrated below.

1. If the risk is judged high or unacceptable, risk control/preventive measures must be implemented immediately, and the work activity must be stopped until they have been introduced. Labour inspectors may issue a stop notice/prohibition notice, and depending on other matters – such as previous advice having been ignored – may wish to initiate other legal proceedings, such as the imposition of sanctions.
2. If the situation is judged as medium risk, but still unacceptable overall, although not requiring immediate action, the inspector may wish to issue improvement notices.
3. If the situation is judged low risk, and considered generally acceptable, any action required can be taken within a longer period. In this case it may be appropriate for labour inspectors to provide verbal or written advice.

3.6 Reporting on the inspection

An inspection will not be complete until those involved in it have completed an inspection report. Legislation and the Labour Inspectorate's policies and procedures vary from country to country, and it is not possible, in this guide, to list everything that should be contained in a report. However, the inspection report is generally an internal document that is used to record matters, both positive and negative, that were noted during the inspection. It should document any actions that the inspector/Inspectorate requires the employers or workers to take.

Documenting this information provides a record of ongoing improvements made by those with legal responsibilities; this information is particularly useful for labour inspectors completing subsequent visits to the premises. Reports may be completed in a paper format, but many Inspectorates are now making use of modern information technology facilities for reporting and maintaining records on enterprises and visits conducted.

The format of such a report varies widely from country to country. It may follow:

- A standard format in which the inspector provides information in response to a series of questions on a prescribed form;
- A narrative format in which the inspector presents information in full sentences and paragraphs under a series of broad headings;
- A combination of the standard and narrative formats;
- Other formats.

When completing the report, labour inspectors should distinguish between "fact" and "opinion". For example, the inspectors may be of the "opinion" that the guard rails on the scaffolding were not at the correct height – but if they had measured the heights of the guard rails, they would have evidence, and they could record as "fact" that the guard rails were not in accordance with requirements. Both fact and opinion are important in an inspection report; but it must be clear as to whether the matter documented is fact or opinion.

The report should be completed as soon as possible after the inspection, while all the observations are clear in the inspectors' minds. Photographs and measurements taken during the inspection also help labour inspectors recall what they have seen – and can indeed be incorporated into the reports.

An example of information that may be contained within such an inspection report is recorded below. The list is not exhaustive and, depending on the purpose of the visit, further information may be required.

General information on the enterprise

- Name, legal status (company, partnership) and relation to other entities and companies (e.g. subsidiaries);
- Location and address;
- Nature and description of business;
- Contact person, and contact details; telephone, email and fax numbers;
- Number of employees (disaggregated by sex, young workers, occupational categories);
- Special processes (e.g. use of chemicals) or "special conditions" (high risk/ hazardous);
- Applicable collective agreement.

Working conditions

- Hours of work and overtime worked (if any);
- Minimum wages and allowances paid;
- Weekly rest periods and holidays;
- Other legal conditions of employment requirements;
- Occupational safety and health management system;
- Systems of work-hazards present and risk control measures;
- Housekeeping;
- Medical and welfare services.

Industrial relations

- Existence of a trade union;
- Collective agreement applicable or not;
- Number and function of workers' representatives;
- Existence of a functioning consultative committee, such as: works council, workers' committee, OSH committee.

Inspection details

- Date and time of inspection;
- Nature of inspection (routine, special, follow-up, investigation) and topics inspected;
- Nature of contraventions identified;
- Priority areas for attention;
- Details of Inspectoral action taken on each priority area.

Any other information or data considered useful

Name and position of inspector

Signature of inspector and date report completed

Ideally, the inspection report should provide information on the way in which the construction site is organized, giving information on who is the owner, main contractors and subcontractors, so that inspectors making future visits will be informed on the roles and responsibilities of the diverse enterprises operating on the site.

Particular attention is to be given to the fact that the inspection report, depending on national legislation, may be incorporated into sanctioning proceedings – in many cases ruled by criminal law. As such they assume the nature of confidential documents.

Appendix 1
Construction Safety and Health Checklist

This checklist identifies some of the hazards that are found on construction sites. The questions are designed to prompt consideration of control measures that may be in place to reduce risks generated by these hazards. It must be stressed that it is not an exhaustive list of questions or control measures.

Access on site

Can everyone get to their place of work safely?

Are access routes free from obstructions and clearly signposted?

Are holes protected with clearly marked and fixed covers to prevent falls?

Are temporary structures stable, adequately braced and not overloaded?

Will permanent structures remain stable during any refurbishment or demolition work?

Is the site tidy, and are materials stored safely?

Is lighting adequate, especially when work is being carried on after dark outside or inside buildings?

Welfare

Are toilets readily available and are they kept clean and properly lit?

Are there washbasins, hot and cold (or warm) running water, soap and towels?

Are the washbasins large enough to wash up to the elbow and are they kept clean?

Is there somewhere to change, dry and store clothing?

Is there a place where workers can sit, make hot drinks and prepare food?

Are drinking water and cups provided?

Can everyone who needs to use them get to the welfare facilities easily and safely?

Is any sleeping accommodation provided away from the work areas?

Scaffolds

Are scaffolds erected, altered and dismantled by competent workers?

Are all uprights provided with base plates (and where necessary, timber sole plates)?

Are all uprights, ledgers, transoms and braces in position?

Is the scaffold tied to the building or structure in enough places to prevent collapse?

Are there double guard rails and toe boards or other suitable protection at every edge, to prevent falling?

Are brick guards provided to prevent materials falling from scaffolds?

Are the working platforms fully boarded and are the boards arranged to avoid tipping or tripping?

Are there effective barriers or warning notices in place to stop workers using an incomplete scaffold, e.g. where working platforms are not fully boarded?

Is the scaffold strong enough to carry the weight of materials stored on it and are these evenly distributed?

Do competent persons inspect the scaffold regularly, e.g. at least once a week if the working platform is two metres or above in height or at suitable intervals if less than two metres, and always after it has been altered or damaged and following extreme weather?

Are the results of inspections recorded and kept?

Have proprietary tower scaffolds been inspected and are they being used in accordance with suppliers' instructions?

Have the wheels of tower scaffolds been locked and outriggers deployed when in use and are the platforms empty when they are moved?

Ladders

Are the ladders in good condition?

Do ladders rest against a solid surface and not on fragile surfaces or insecure materials?

Are they secured to prevent them slipping sideways or outwards?

Are ladders positioned correctly at a one in four angle?

Do ladders rise a sufficient height above their landing place (about five rungs)? If not, are other handholds available?

Are the ladders positioned so that users do not have to overstretch?

Roof work

Is there edge protection to stop workers or materials falling?

During industrial roofing, have nets been provided to stop workers falling from the leading edge of the roof and from partially fixed sheets?

Where nets are used, have they been rigged safely by a competent person?

Have fragile surfaces such as fibre cement sheets and roof lights been identified?

Have precautions been taken to stop workers falling through fragile surfaces when working on the roof, e.g. by providing barriers, covers or working platforms?

Are workers kept away from the area below the roof work? If this is not possible, have additional precautions been taken to stop debris falling onto them?

Powered access equipment

Has the equipment been installed by a competent person?

Are the operators trained and competent?

Is the safe working load clearly marked?

Is the equipment inspected by a competent person?

Does the working platform of the powered access equipment have adequate, secure guard rails and toe boards or other barriers to prevent workers and materials falling off? Have precautions been taken to prevent workers being struck by:

- the moving platform;
- projections from the building; or
- falling materials?

Traffic, vehicles and plant

Are vehicles and pedestrians kept apart? If not, do those in control of the site:

- separate them as much as possible using barriers?
- inform workers about the problem, and what to do about it?
- display warning signs?

Are zero tail swing excavators used or is there adequate clearance around slewing vehicles?

Is reversing avoided, e.g. by using a one-way system, or if not, are properly trained signallers used?

Are vehicles and plant properly maintained, e.g. do the steering lights, handbrake and footbrake work properly?

Have drivers received proper training and are they competent for the vehicles or plant they are operating?

Are loads properly secured?

Are passengers only carried on vehicles designed to carry them?

What measures are in place to ensure that plant and vehicles are not used on dangerous slopes?

Hoists

Has the equipment been installed by a competent person?

Are the operators trained and competent?

Is the rated capacity clearly marked?

Are the hoists inspected by a competent person?

Does the hoist have a current report of examination and a record of inspection?

Is there a suitable base enclosure to prevent workers from being struck by any moving part of the hoist?

Are the landing gates kept shut except when the platform is at the landing?

Are controls arranged so that the hoist can be operated from one position only?

Cranes

Is the crane suitable for the job?

Has the lift been properly planned by a competent person?

Is the crane on a firm, level base? Are the riggers properly set?

Who is the "crane supervisor" responsible for controlling the lifting operation on site?

Are the crane driver and signaller trained and competent?

Is the load secure?

Has the signaller/slinger been trained to give signals and to attach loads correctly?

Are arrangements in place to ensure the driver can see the load, or has a signaller been provided to help?

Are workers stopped from walking or working beneath a raised load?

Does the crane have a current report of examination and record of inspection?

Excavations

Is there adequate support for the excavation, or has it been sloped or battered back to a safe angle?

Is there a safe method used for putting in the support, without workers working in an unsupported trench?

Is there safe access into the excavation, e.g. a sufficiently long, secured ladder?

Are there barriers or other protection to stop workers and vehicles falling in?

Are properly secured stop blocks provided to prevent tipping vehicles falling in?

Could the excavation affect the stability of neighbouring structures or services?

Are materials, spoil and plant stored away from the edge of the excavation to reduce the chance of a collapse?

Is the excavation regularly inspected by a competent person?

Manual handling

Are there heavy materials such as roof trusses, concrete lintels, kerbstones or bagged products which could cause problems if they have to be moved by hand? If so, can persons in control of the work:

- choose lighter materials;
- use wheelbarrows, hoists, telehandlers and other plant or equipment so that manual lifting of heavy objects is kept to a minimum;
- order materials such as cement and aggregates in 25 kilogram bags; and/or
- avoid the repetitive laying of heavy building blocks weighing more than 20 kilograms?

Have workers been instructed and trained how to lift safely?

Hazardous substances

Have all harmful substances and materials been identified, such as asbestos, lead, solvents, paints, cement and dust?

Is disposal of hazardous substances in accordance with national legislation?

Have precautions been identified and put in place to prevent or control exposure to hazardous substances, by:

- doing the work in a different way, to remove the risk entirely;
- using a less hazardous material; or
- using tools fitted with dust extraction?

Have workers had information and training so they know what the risks are from the hazardous substances used and produced on site, and what they need to do to avoid the risks?

Are procedures in place to prevent contact with wet cement (as this can cause both dermatitis and cement burns)?

Has health surveillance been arranged, in accordance with national legislation, for workers using certain hazardous substances (e.g. lead)?

Noise

Have workers had information and training so they know what the risks are from noise on site, and what they need to do to avoid those risks?

Has workers' exposure to noise been identified and assessed?

Can the noise be reduced by using different working methods or selecting quieter plant, e.g. by fitting breakers and other plant or machinery with silencers?

Are workers not involved in the work kept away from the source of the noise?

Is suitable hearing protection provided and worn in noisy areas?

Have hearing protection zones been marked?

Has health surveillance been arranged, in accordance with national legislation, for workers exposed to high levels of noise?

Hand-arm vibration

Have workers had information and training so they know what the risks are from hand-arm vibration (HAV) on site, and what they need to do to avoid those risks?

Have you identified and assessed risks to workers from prolonged use of vibrating tools such as concrete breakers, angle grinders or hammer drills?

Has exposure to HAV been reduced as much as possible by selecting suitable work methods and plant?

Are reduced-vibration tools used whenever possible?

Have vibrating tools been properly maintained?

Has health surveillance been arranged, in accordance with national legislation, for workers exposed to high levels of hand-arm vibration, especially when exposed for long periods?

Electricity and other services

Are all necessary services provided on site before work begins and have all existing services present on site been identified (e.g. electric cables or gas mains), and effective steps (if necessary) taken, to prevent danger from them?

Is low voltage for tools and equipment being used, e.g. battery-operated tools or low-voltage systems?

Where mains voltage has to be used, are trip devices (e.g. residual current devices (RCDs)) provided for all equipment?

Are RCDs checked daily by users and properly maintained?

Are cables and leads protected from damage?

Are all connections to the system properly made and are suitable plugs used?

Are tools and equipment checked by users, visually examined on site and regularly inspected and tested by a competent person?

Where there are overhead lines, has the electricity supply been turned off, or have other precautions been taken, such as providing “goal posts” or taped markers?

Have hidden electricity cables and other services been located (e.g. with a locator and plans) and marked, and have you taken precautions for safe working?

Tools and machinery

Are the right tools or machinery being used for the job?

Are all dangerous parts guarded, e.g. gears, chains drives, projecting engine shafts?

Are guards secured and in good repair?

Are tools and machinery maintained in good repair and are all safety devices operating correctly?

Are all operators trained and competent?

Fires and emergencies

General

Are there emergency procedures, e.g. for evacuating the site in case of fire or for rescue from a confined space?

Do workers on site know what the procedures are?

Is there a means of raising the alarm, and does it work?

Is there a way to contact the emergency services from the site?

Are there adequate escape routes and are these kept clear?

Is there adequate first-aid provision?

Fire

Is the quantity of flammable materials, liquids and gases on site kept to a minimum?

Are they properly stored?

Are suitable containers used for flammable liquids?

Are flammable gas cylinders returned to a ventilated store at the end of the shift?

Are smoking and other ignition sources banned in areas where gases or flammable liquids are stored or used?

Are gas cylinders, associated hoses and equipment properly maintained and in good condition?

When gas cylinders are not in use, are the valves fully closed?

Is flammable and combustible waste removed regularly and stored in suitable bins or skips?

Are suitable fire extinguishers provided?

Protecting the public

Is the work fenced off from the public?

Are roadworks barriered off and lit, and a safe alternative route provided?

Are the public protected from falling material?

Has a safe route been provided through roadworks or pavement scaffolding for people with prams, wheelchair users and visually impaired people?

When work has stopped for the day:

- is the boundary secure and undamaged?
- are all ladders removed or their rungs boarded so that they cannot be used?
- are excavations and openings securely covered or fenced off?
- is all plant immobilized to prevent unauthorized use?
- are bricks and materials safely stacked?
- are flammable or dangerous substances locked away in secure storage places?

Appendix 2
Other conditions of work checklist

1 - Identification of employer/s

Verification of:

- Name of employer/company, firm;
- Contractor and subcontractors.

2 - Employment relationships

Verification of:

- Number of workers;
- Names, ID;
- Labour contracts.

3 - Workers' representation rights

Verification of:

- Workers' representatives;
- Bipartite committees.

4 - Salaries and wages

The salary paid to workers is the correct one. Verification of:

- *Minimum wages;*
- *Equity in payment (non-discrimination):*
  - Existence of any difference due to discriminatory reasons: age, sex, religion, nationality… ("equal pay for work of equal value").
- *Conditions of wages:*
  - Determination in the labour contracts;
  - Information to workers: rates of wages payable, the method of calculation, the periodicity of wage payments, the place of payment, and the conditions under which deductions can be made;
  - Payment:
    - Only in legal tender (prohibition of promissory notes, vouchers or coupons) or allowances in kind (fair and reasonable);
    - Directly to the worker concerned;
    - Correctly and in a timely manner (evidence of the payment).
- *Deductions:*
  - Proper application of the legal specific limits:
    - Income tax;
    - Social security contributions.

  Deductions appear on the payslip.
- *Notification of wages:*
  - Payslips:
    - Delivered to workers;
    - Records kept by employers.
  - The payslips contain full wage details such as:
    - Total wages paid for the pay period;
    - The basis on which wages are paid;
    - Date of payment and the pay period covered;
    - All additions to or deductions from workers' wages;
    - Total overtime earnings;
    - Total hours worked for the pay period;
    - Payment method (cash, check, or bank transfer).

5 - Working hours, rest periods and overtime

Working time is a central element of employment contracts and details should be agreed before work commences.

Quantitative aspects of working time to verify:

- Hours of work:
  - Daily;
  - Weekly.
- Overtime.
- Rest periods:
  - Daily rest periods;
  - Time off between shifts;
  - Weekly or bi-weekly rest periods.
- Leave arrangements.

Qualitative aspects:

- Organization of hours of work:
  - Shift work;
  - Night work;
  - Flexible hours.
- Part-time work.

6 - Child labour

Verification of legal age for admission to employment:

Hazardous works for children, i.e.:

- Working underground, underwater, or in confined spaces with the risk of becoming trapped;
- Scaffolding, ladders, working platforms, staircases and stairwells which can become insecure or unstable;
- Working at dangerous heights, e.g. on roofs;
- Trenches, holes and excavations that can cave in.

7 - Migration and employment of foreign nationals

Aspects to verify:

- Their legal status in the country.

In the event that migrant workers are in an irregular situation (without valid work permit):

- Actions to be taken and reports to other institutions or authorities;
- Information and advice to foreign workers about:
  - Rights and duties;
  - Situation in the social security scheme;
  - Possible indemnifications and compensations;
  - Steps, options and actions that could be taken by the worker;
  - Institutions that could provide help and support to the worker;
  - Specific information concerning the criminal or judiciary investigations or procedures.

8 - Social security contributions

Verification of:

- Registration of the company with the social security institution;
- Registration of workers by the employer with the social security institution;
- Registration of self-employed workers with the social security institution;
- Deduction of the workers' contributions;
- Payment of the total contribution by the employer or the self-employed worker.

9 - Qualification and Training

Verification of:

- Skills and knowledge of workers and contractors;
- Validity of certificates required;
- Effectiveness of training material and procedures by observing individuals in the field;
- Supervisors' skills qualifications and experience to plan and organize construction operations;
- All workers are sufficiently trained;

- The existence of competence requirements for selecting contractors; certified contractors are used whenever possible;
- All necessary licences and certificates are checked and filed.

10 - Equality of opportunity and treatment (non-discrimination)

Verification of:

- Workers have been recruited and promoted on the basis of skills qualifications and experience;
- The enterprise has an equal opportunities policy that covers, at a minimum, the recruitment, promotion, division of work and dismissal of staff;
- There are procedures to ensure that this policy is known and implemented;
- Workers are paid equally for work of equal value. Employers do not value certain tasks above others (i.e. “male tasks” higher than “female tasks”);
- Work is adapted to meet the characteristics of workers. Work is adapted to the needs of disabled or elderly workers to allow them to continue work where this does not cause risk to themselves or others.

The construction sector plays an essential role in the socio-economic development of many countries, not least on account of the number of workers engaged in construction activities. However, the employment relationship – the legal link between employers and workers – in construction activities is often unclear, and this regularly results in workers being denied access to certain rights and benefits. In addition, workers are often exposed to many hazards. Consequently, working conditions on many construction sites cannot be deemed "decent", since workers are not guaranteed a fair, just, safe and healthy working environment.

Inspections conducted by labour inspectors have an important role to play in ensuring compliance with legislation and thus decent working conditions for workers in all sectors, including construction. The aim of this guide is to assist labour inspectors fulfil their inspectorial function by providing practical information, in a user-friendly format, on a suggested methodology for conducting inspections of construction activities. This methodology ranges from the planning of the inspection itself to the reporting of its findings, and provides technical information that labour inspectors can pass on to employers and workers, with a view to ensuring "decent work".

The guide details many of the working conditions that labour inspectors will address, as well as the hazards to which workers may be exposed. It also documents internationally recognized safety measures that will, if followed, reduce the likelihood of workers suffering from occupational accidents and diseases.

Labour Administration, Labour Inspection and Occupational Safety and Health Branch (LABADMIN/OSH)
International Labour Office
Route des Morillons 4
CH-1211 Geneva 22
Switzerland

Tel: +41 22 799 67 15
Fax: +41 22 799 68 78
Email: labadmin-osh@ilo.org
www.ilo.org/labadmin-osh

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