

# OCCUPATIONAL HEALTH AND SAFETY ACT, 1993

## CONSTRUCTION REGULATIONS, 2003 GNR. 1010 of 18 July 2003

The Minister of Labour has under section 43 of the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), after consultation with the Advisory Council for Occupational Health and Safety, made the regulations in the Schedule.

### SCHEDULE

#### Definitions

1. In these Regulations any word or expression to which a meaning has been assigned in the Act shall have the meaning so assigned and, unless the context otherwise indicates—

“**agent**” means any person who acts as a representative for a client in the managing the overall construction work.

**“angle of repose”** means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on a surface, rather than sliding or crumbling away;

**“batch plant”** means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

**“client”** means any person for whom construction work is performed;

**“competent person”** in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training;

**“construction work”** means any work in connection with—

- (a) the erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- (b) the installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- (c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- (d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

**“construction vehicle”** means a vehicle used for means of conveyance for transporting persons or material or both such persons and material, as the case may be, both on and off the construction site for the purposes of performing construction work;

**“contractor”** means an employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

**“design”** in relation to any structure includes drawings, calculations, design details and specifications;

**“designer”** means any person who—

- (a) prepares a design;
- (b) checks and approves a design;
- (c) arranges for any person at work under his control (including an employee of his, where he is the employer) to prepare a design, as well as;

- (d) architects and engineers contributing to, or having overall responsibility for the design;
- (e) build services engineers designing details for fixed plant;
- (f) surveyors specifying articles or drawing up specifications;
- (g) contractors carrying out design work as part of a design and build project;
- (h) temporary works engineer designing formwork and false work; and
- (i) interior designers, shop-fitters and landscape architects.

“**ergonomics**” means the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance;

“**excavation work**” means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

“**explosive powered tool**” means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;

“**fall prevention equipment**” means equipment used to prevent persons from falling from an elevated position, including personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment;

“**fall arrest equipment**” means equipment used to arrest the person in a fall from an elevated position, including personal equipment, body harness, lanyards, deceleration devices, lifelines or similar equipment, but excludes body belts;

“**fall protection plan**” means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk;

“**hazard identification**” means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed;

“**health and safety file**” means a file, or other record in permanent form, containing the information required as contemplated in these regulations;

“**health and safety plan**” means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

“**health and safety specification**” means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

**“material hoist”** means a hoist used to lower or raise material and equipment, and includes cantilevered platform hoists, mobile hoists, friction drive hoists, scaffold hoists, rack and pinion hoists and combination hoists;

**“medical certificate of fitness”** means a certificate valid for one year issued by an occupational health practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa;

**“method statement”** means a written document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

**“mobile plant”** means machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site;

**“National Building Regulations”** means the National Building Regulations made under section 17(1) of the National Building Regulations and Building Standards Act, 1977 (Act No.103 of 1977), and published under Government Notice No. R.1081 of 10 June 1988, as amended;

**“person day”** means one individual carrying out construction work on a construction site for one normal working shift;

**“principal contractor”** means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

**“professional engineer or professional certificated engineer”** means any person holding registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

**“professional technologist”** means any person holding registration as a Professional Technologist under the Engineering Profession Act, 2000 ( Act No. 46 of 2000);

**“provincial director”** means the provincial director as defined in regulation 1 of the General Administrative Regulations under the Act;

**“risk assessment”** means a programme to determine any risk associated with any hazard at a construction site , in order to identify the steps needed to be taken to remove, reduce or control such hazard;

**“roof apex height”** means the dimensional height in metres measured from the lowest ground level abutting any part of a building to the highest point of the roof;

**“SABS 085”** means the South African Bureau of Standards’ Code of Practice entitled “The Design, Erection, Use and Inspection of Access Scaffolding”;

**“SABS 0400”** means the South African Bureau of Standards, Code of Practice for the application of the National Building Regulations;

**“SABS EN 1808”** means the South African Bureau of Standards’ Standard Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

**“SABS 1903”** means the South African Bureau of Standards’ Standard Front-end Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

**“scaffold”** means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

**“shoring”** means a structure such as a hydraulic, mechanical or timber/steel shoring system that supports the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation, and “shoring system” has a corresponding meaning;

**“structure”** means—

- (a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- (b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
- (c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two metres or more;

**“suspended platform”** means a working platform suspended from supports by means of one or more separate ropes from each support;

**“the Act”** means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

**“tunnelling”** means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral;

## **Scope of application**

2.(1) These Regulations, shall apply to any persons involved in construction work.

(2) The provisions of subregulation 4.(1)(a) shall not be applicable where the construction work carried out is in relation to a single storey domestic building for a client who is going to reside in such dwelling upon completion thereof.

(3) The provisions of subregulations 4.(1)(a) and 5(1), 5.(3)(a) and 5(4) shall not be applicable where the construction work is in progress and more than fifty percent thereof has been completed at the date of promulgation of these regulations: Provided that an inspector may instruct accordingly that these Regulations shall be applicable.

## **Notification of construction work**

**3.(1)** A principal contractor who intends to carry out any construction work shall—

- (a) before carrying out that work, notify the provincial director in writing of the construction work if it includes—
  - (i) the demolition of a structure exceeding a height of 3 metres; or
  - (ii) the use of explosives to perform construction work; or
  - (iii) the dismantling of fixed plant at a height greater than 3m.
- (b) before carrying out that work, notify the provincial director in writing when the construction work—
  - (i) exceeds 30 days or will involve more than 300 person days of construction work; and
  - (ii) includes excavation work deeper than 1m; or
  - (iii) includes working at a height greater than 3 metres above ground or a landing.

(2) The notification to the provincial director contemplated in subregulation (1) must be done on the form similar to Annexure A to these regulations.

(3) A principal contractor shall ensure that a copy of the completed form contemplated in subregulation (2) is kept on site for inspection by an inspector, client, client's agent or employee.

## **Client**

**4.(1)** A client shall be responsible for the following in order to ensure compliance with the provisions of the Act—

- (a) to prepare a documented health and safety specification for the construction work, and provide any principal contractor who is making a bid or appointed to perform construction work for the client with the same;
- (b) to promptly provide the principal contractor and his or her agent with any information which might affect the health and safety of any person at work carrying out construction work;
- (c) to appoint each principal contractor in writing for the project or part thereof on a construction site;
- (d) to take reasonable steps to ensure that each principal contractor's health and safety plan as determined in subregulation 5(1) is implemented and maintained on the construction site: Provided that the steps taken, shall include periodic audits at intervals mutually agreed upon between the client and principal contractor, but at least once every month;

- (e) to stop any contractor from executing construction work which is not in accordance with the principal contractor's health and safety plan contemplated in subregulation 5(1) for the site or which poses to be a threat to the health and safety of persons;
- (f) to ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the principal contractor to execute the work safely;
- (g) to ensure that every principal contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
- (h) to ensure that potential principal contractors submitting tenders, have made provision for the cost of health and safety measures during the construction process.

(2) A client shall discuss and negotiate with the principal contractor the contents of the health and safety plan contemplated in subregulation 5(1) and thereafter finally approve the health and safety plan for implementation.

(3) A client shall ensure that a copy of the principal contractor's health and safety plan is available on request to an employee, inspector or contractor.

(4) No client shall appoint a principal contractor to perform construction work, unless the client is reasonably satisfied that the principal contractor that he or she intends to appoint has the necessary competencies and resources to carry out the work safely.

(5) A client may appoint an agent in writing to act as his or her representative and where such an appointment is made, the responsibilities as are imposed by these regulations upon a client, shall as far as reasonably practicable apply to the person so appointed.

(6) No client shall appoint any person as his agent, unless the client is reasonably satisfied that the person he or she intends to appoint has the necessary competencies and resources to perform the duties imposed on a client by these regulations.

### **Principal Contractor and Contractor**

5. (1) A principal contractor shall provide and demonstrate to the client a suitable and sufficiently documented health and safety plan, based on the client's documented health and safety specification contemplated in regulation 4(1)(a), which shall be applied from the date of commencement of and for the duration of the construction work.

(2) A principal contractor shall take reasonable steps as far as is necessary to ensure co-operation between all contractors to enable each of those contractors to comply with the provisions of these regulations.

(3) A principal contractor shall be responsible for the following in order to ensure compliance with the provisions of the Act—

- (a) to provide any contractor who is making a bid or appointed to perform construction work for the principal contractor, with the relevant sections of the

documented health and safety specification contemplated in regulation 4(1)(a) pertaining to the construction work which has to be performed;

- (b) to appoint each contractor contemplated in paragraph (a) in writing for the part thereof of the project on a construction site;
- (c) to take reasonable steps to ensure that each contractor's health and safety plan contemplated in subregulation (4) is implemented and maintained on the construction site: Provided that the steps taken shall include periodic audits at intervals mutually agreed upon between the principal contractor and contractor(s), but at least once every month;
- (d) to stop any contractor from executing construction work which is not in accordance with the principal contractor's and/or contractor's health and safety plan for the site or which poses a threat to the health and safety of persons;
- (e) to ensure that where changes are brought about, sufficient health and safety information and appropriate resources are made available to the contractor to execute the work safely;
- (f) to ensure that every contractor is registered and in good standing with the compensation fund or with a licensed compensation insurer prior to work commencing on site; and
- (g) to ensure that potential contractors submitting tenders have made provision for the cost of health and safety measures during the construction process.

(4) A contractor shall provide and demonstrate to the principal contractor a suitable and sufficiently documented health and safety plan, based on the relevant sections of the principal contractor's health and safety specification contemplated in regulation 5(3)(a) provided by the principal contractor, which plan shall be applied from the date of commencement of and for the duration of the construction work.

(5) A principal contractor shall discuss and negotiate with the contractor the contents of the health and safety plan contemplated in subregulation (4), and shall finally approve that plan for implementation.

(6) A principal contractor shall ensure that a copy of his or her health and safety plan contemplated in subregulation (1), as well as the contractor's health and safety plan contemplated in subregulation (4), is available on request to an employee, inspector, contractor, client or client's agent.

(7) Every contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of the Act and these Regulations, is opened and kept on site and made available to an inspector, client, client's agent or principal contractor upon request.

(8) A principal contractor shall hand over a consolidated health and safety file to the client upon completion of the construction work and shall, in addition to the documentation referred to in subregulation (7), include a record of all drawings, designs, materials used and other similar information concerning the completed structure.

(9) A principal contractor shall ensure that in addition to the documentation required in the health and safety file as determined in subregulations (7) and (8), a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done is included and available.

(10) No principal contractor shall appoint a contractor to perform construction work unless the principal contractor is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.

(11) Where a contractor appoints another contractor to perform construction work, the responsibilities as determined in subregulations (2) to (6) that apply to the principal contractor shall apply to the contractor as if he or she were the principal contractor.

(12) No contractor shall appoint another contractor to perform construction work unless he or she is reasonably satisfied that the contractor he or she intends to appoint, has the necessary competencies and resources to perform the construction work safely.

(13) Contractors shall co-operate with the principal contractor as far as is necessary to enable each of them to comply with the provisions of the Act.

(14) Every contractor shall as far as is reasonably practicable, promptly provide the principal contractor with any information which might affect the health and safety of any person at work carrying out construction work or any person who might be affected by the work of such a person at work or which might justify a review of the health and safety plan.

### **Supervision of construction work**

6.(1) Every contractor shall appoint a full-time competent employee designated in writing as the construction supervisor, with the duty of supervising the performance of the construction work.

(2) The contractor may in writing appoint one or more competent employees to assist the appointed construction supervisor contemplated in subregulation (1), and every such employee shall, to the extent clearly defined by the contractor in the letter of designation, have the same duties as the construction supervisor: Provided that the designation of any such employee shall not relieve the construction supervisor contemplated in subregulation (1) of any personal accountability for failing in his supervisory duties referred to in terms of this regulation.

(3) Where the contractor has not appointed an employee as referred to subregulation (2), or, in the opinion of an inspector, not a sufficient number of such employees, that inspector may require the employer to appoint the number of employees indicated by the inspector, and the provisions of subregulation (2) shall apply in respect of those employees as if they had in the first instance been appointed under subregulation (2).

(4) No construction supervisor appointed in terms of subregulation (1) shall supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed: Provided that a sufficient number of competent employees have been appropriately designated under subregulation (2) on all the construction sites, the appointed construction supervisor may supervise more than one site.

(5) If, however, the construction supervisor appointed in terms of subregulation (1) for more than one construction site will not, in the opinion of an inspector, be able to supervise the works favourably, an inspector may require the contractor to appoint the required number of employees as contemplated in subregulation (2) to assist the appointed construction supervisor or instruct the contractor to appoint the construction supervisor who had been appointed in terms of subregulation (1) more appropriately.

(6) A contractor shall upon having considered the size of the project, the degree of dangers likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction safety officer in writing to assist in the control of all safety related aspects on the site: Provided that, where the question arises as to whether a construction safety officer is necessary, the decision of an inspector shall be decisive.

(7) The appointed construction safety officer as contemplated in subregulation (6) shall as far as is reasonably practicable be utilised to give input at the early design stage and where not appointed at this stage, he or she shall be given the opportunity to input into the health and safety plan when wanting to do so, and a record of such shall be kept in the health and safety file contemplated in regulation 5(7).

(8) No contractor shall appoint a construction safety officer to assist in the control of safety related aspects on the site unless he or she is reasonably satisfied that the construction safety officer he or she intends to appoint, has the necessary competencies and resources to assist the contractor.

## **Risk assessment**

7.(1) Every contractor performing construction work shall before the commencement of any construction work and during construction work, cause a risk assessment to be performed by a competent person appointed in writing and the risk assessment shall form part of the health and safety plan to be applied on the site and shall include at least—

- (a) the identification of the risks and hazards to which persons may be exposed to;
- (b) the analysis and evaluation of the risks and hazards identified;
- (c) a documented plan of safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- (d) a monitoring plan; and
- (e) a review plan.

(2) A contractor shall ensure that a copy of the risk assessment is available on site for inspection by an inspector, client, client's agent, contractor, employee, representative trade union, health and safety representative or any member of the health and safety committee.

(3) Every contractor shall consult with the health and safety committee or, if no health and safety committee exists, with a representative group of employees, on the development, monitoring and review of the risk assessment.

(4) A contractor shall ensure that all employees under the his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work

procedures before any work commences, and thereafter at such times as may be determined in the risk assessment.

(5) A principal contractor shall ensure that all contractors are informed regarding any hazard as stipulated in the risk assessment before any work commences, and thereafter at such times as may be determined in the risk assessment.

(6) A contractor shall ensure that as far as is reasonably practicable, ergonomic related hazards are analysed, evaluated and addressed in the risk assessment.

(7) Notwithstanding the requirements laid down in subregulation (4), no contractor shall allow or permit any employee to enter any site, unless such person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

(8) A contractor shall ensure that all visitors to a construction site undergoes health and safety instruction pertaining to the hazards prevalent on the site and shall be provided with the necessary personal protective equipment: Provided that where visits are made only to the site office which is not in direct contact with the construction work activities, those health and safety instructions and the provision of personal protective equipment may not apply.

(9) Every employee on site shall-

- (a) be in possession of proof of the health and safety induction training as determined in subregulation (7), issued by a competent person of the contractor prior to the commencement of construction work; and
- (b) carry the proof contemplated in paragraph (a) for the duration of that project or for the period that the employee will be on the construction site.

## **Fall protection**

8.(1) A contractor shall cause—

- (a) the designation of a competent person, responsible for the preparation of a fall protection plan;
- (b) the fall protection plan contemplated in (a) to be implemented, amended where and when necessary and maintained as required;
- (c) steps to be taken in order to ensure the continued adherence to the fall protection plan.

(2) The fall protection plan contemplated in subregulation (1), shall include—

- (a) a risk assessment of all work carried out from an elevated position which shall include the procedures and methods used to address all the risks identified per location;

- (b) the processes for evaluation of the employees physical and psychological fitness necessary to work at elevated positions and the records thereof;
- (c) the programme for the training of employees working from elevated positions and records thereof; and
- (d) the procedure addressing the inspection, testing and maintenance of all fall protection equipment.

(3) A contractor shall ensure that the construction supervisor appointed in terms of regulation 6(1), is in possession of the most recently updated version of the fall protection plan.

(4) Notwithstanding the provisions of subregulations (1) and (2), the contractor shall ensure that—

- (a) all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings;
- (b) no person works in an elevated position, unless such work is performed safely as if working from a scaffold or ladder;
- (c) notices are conspicuously placed at all openings where the possibility exists that a person might fall through such openings;
- (d) fall prevention and fall arrest equipment is—
  - (i) suitable and of sufficient strength for the purpose or purposes for which it is being used having regard to the work being carried out and the load, including any person, it is intended to bear; and
  - (ii) securely attached to a structure or plant and the structure or plant and the means of attachment thereto is suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who is liable to fall;
- (e) fall arrest equipment shall only be used where it is not reasonably practicable to use fall prevention equipment; and
- (f) suitable and sufficient steps shall be taken to ensure, as far as is reasonably practicable, that in the event of a fall by any person, the fall arrest equipment or the surrounding environment does not cause injury to the person.

(5) Where roof work is being performed on a construction site, the contractor shall ensure that in addition to the requirements set out in subregulations (2) and (4), it is furthermore indicated in the fall protection plan—

- (a) that the roof work has been properly planned;
- (b) that the roof erectors are competent to carry out the work;

- (c) that no employees are permitted to work on roofs during inclement weather conditions or if weather conditions are a hazard to the health and safety of the employees;
- (d) that prominent warning notices are to be placed where all covers to openings are not of sufficient strength to withstand any imposed loads and where fragile material exists;
- (e) that the areas mentioned in paragraph (d) are to be barricaded off to prevent persons from entering;
- (f) that suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and
- (g) that there is suitable and sufficient guard-rails or barriers and toe-boards or other similar means of protection to prevent, so far as is reasonably practicable, the fall of any person, material or equipment.

## **Structures**

9.(1) A contractor shall ensure that—

- (a) all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work; and
- (b) no structure or part of a structure is loaded in a manner which would render it unsafe.

(2) The designer of a structure shall—

- (a) before the contract is put out to tender, make available to the client all relevant information about the design of the relevant structure that may affect the pricing of the construction work;
- (b) inform the contractor in writing of any known or anticipated dangers or hazards relating to the construction work, and make available all relevant information required for the safe execution of the work upon being designed or when the design is subsequently altered;
- (c) subject to the provisions of paragraph (a) and (b) ensure that the following information is included in a report and made available to the contractor—
  - (i) a geo-science technical report where appropriate;
  - (ii) the loading the structure is designed to withstand; and
  - (iii) the methods and sequence of construction.

- (d) not include anything in the design of the structure necessitating the use of dangerous procedures or materials hazardous to the health and safety of persons, which could be avoided by modifying the design or by substituting materials;
- (e) take into account the hazards relating to any subsequent maintenance of the relevant structure and should make provision in the design for that work to be performed to minimize the risk;
- (f) carry out sufficient inspections at appropriate times of the construction work involving the design of the relevant structure in order to ensure compliance with the design and a record of those inspections is to be kept on site;
- (g) stop any contractor from executing any construction work which is not in accordance with the relevant design;
- (h) conduct a final inspection of the completed structure prior to its commissioning in order to render it safe for use and issue a completion certificate to the contractor; and
- (i) ensure that when preparing the design, cognizance is taken of ergonomic design principles in order to minimize ergonomic related hazards in all phases of the life cycle of a structure.

(3) A contractor shall ensure that all drawings pertaining to the design of the relevant structure are kept on site and are available on request by an inspector, contractors, client, client's agent or employee.

(4) Any owner of a structure shall ensure that inspections of that structure upon completion are carried out periodically by competent persons in order to render the structure safe for continued use: Provided that the inspections are carried out at least once every six months for the first two years and thereafter yearly and records of such inspections are kept and made available to an inspector upon request.

(5) Any owner of a structure shall ensure that the structure upon completion is maintained in such a manner that the structure remains safe for continued use and such maintenance records shall be kept and made available to an inspector upon request.

### **Formwork and support work**

**10.** A contractor shall ensure that—

- (a) all formwork and support work operations are carried out under the supervision of a competent person who has been appointed in writing for that purpose;
- (b) all formwork and support work structures are adequately designed, erected, supported, braced and maintained so that they will be capable of supporting all anticipated vertical and lateral loads that may be applied to them and also that no loads are imposed onto the structure that the structure is not designed to withstand;

- (c) the designs of formwork and support work structures are done upon close reference to the structural design drawings and where any uncertainty exists, the structural designer should be consulted;
- (d) all drawings pertaining to the design of formwork or support work structures are kept on the site and are available on request by an inspector, contractor, client, client's agent or employee;
- (e) all equipment used in the formwork or support work structure are carefully examined and checked for suitability by a competent person, before being used;
- (f) all formwork and support work structures are inspected by a competent person immediately before, during and after the placement of concrete or any other imposed load and thereafter on a daily basis until the formwork and support work structure has been removed and the results have been recorded in a register and made available on site;
- (g) if, after erection, any formwork and support work structure is found to be damaged or weakened to such a degree that its integrity is affected, it shall be safely removed or reinforced immediately;
- (h) adequate precautionary measures are taken in order to—
  - (i) secure any deck panels against displacement; and
  - (ii) prevent any person from slipping on support work or formwork due to the application of formwork or support work release agents;
- (i) as far as is reasonably practicable, the health of any person is not affected through the use of solvents or oils or any other similar substances;
- (j) upon casting concrete, the support work or formwork structure should be left in place until the concrete has acquired sufficient strength to support safely, not only its own weight, but also any imposed loads and not removed until authorisation has been given by the competent person contemplated in paragraph (a);
- (k) provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level;
- (l) all employees required to erect, move or dismantle formwork and support work structures are provided with adequate training and instruction to perform these operations safely; and
- (m) the foundation conditions are suitable to withstand the weight caused by the formwork and support work structure and any imposed loads such that the formwork and support work structure is stable.

### **Excavation work**

**11.(1)** A contractor shall ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing.

(2) A contractor shall evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

(3) Every contractor who performs excavation work shall—

- (a) take suitable and sufficient steps in order to prevent, as far as is reasonably practicable, any person from being buried or trapped by a fall or dislodgement of material in an excavation;
- (b) not require or permit any person to work in an excavation which has not been adequately shored or braced: Provided that shoring and bracing may not be necessary where—
  - (i) the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
  - (ii) such an excavation is in stable material: Provided that—
    - (aa) permission being given in writing by the appointed competent person contemplated in subregulation (1) upon evaluation by him or her of the site conditions; and
    - (bb) where any uncertainty pertaining to the stability of the soil still exists, the decision from a professional engineer or a professional technologist competent in excavations shall be decisive and such a decision shall be noted in writing and signed by both the competent person contemplated in subregulation (1) and the professional engineer or technologist, as the case may be;
- (c) take steps to ensure that the shoring or bracing contemplated in paragraph (b) is designed and constructed in such a manner rendering it strong enough to support the sides of the excavation in question;
- (d) ensure that no load, material, plant or equipment is placed or moved near the edge of any excavation where it is likely to cause its collapse and thereby endangering the safety of, any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing;
- (e) ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, the steps are taken that may be necessary to ensure the stability of such building, structure or road and the safety of persons;
- (f) cause convenient and safe means of access to be provided to every excavation in which persons are required to work and such access shall not be further than 6m from the point where any worker within the excavation is working;
- (g) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in any way be affected by the work to be performed, and shall before the commencement of excavation work that may affect any such service, take the steps that may be necessary to render the circumstances safe for all persons involved;

- (h) cause every excavation, including all bracing and shoring, to be inspected—
  - (i) daily, prior to each shift;
  - (ii) after every blasting operation;
  - (iii) after an unexpected fall of ground;
  - (iv) after substantial damage to supports; and
  - (v) after rain,by the competent person contemplated in subregulation (1), in order to pronounce the safety of the excavation to ensure the safety of persons, and those results are to be recorded in a register kept on site and made available to an inspector, client, client's agent, contractor or employee upon request;
- (i) cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be—
  - (i) adequately protected by a barrier or fence of at least one metre in height and as close to the excavation as is practicable; and
  - (ii) provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor;
- (j) ensure that all precautionary measures as stipulated for confined spaces as determined in the General Safety Regulations promulgated by Government Notice No.R.1031 of 30 May 1986, as amended, are complied with when entering any excavation;
- (k) ensure that, where the excavation work involves the use of explosives, a method statement is developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for excavation work and that the procedures therein are followed; and
  - (l) cause warning signs to be positioned next to an excavation within which persons are working or carrying out inspections or tests.

## **Demolition work**

**12.(1)** A contractor shall appoint a competent person in writing to supervise and control all demolition work on site.

(2) A contractor shall ensure that prior to any demolition work being carried out, and in order also to ascertain the method of demolition to be used, a detailed structural engineering survey of the structure to be demolished is carried out by a competent person and that a method statement on the procedure to be followed in demolishing the structure is developed.

(3) During the demolition, a competent person shall check the structural integrity of the structure at intervals determined in the method statement contemplated in subregulation (2), in order to avoid any premature collapses.

(4) Every contractor who performs demolition work shall—

- (a) with regard to a structure being demolished, take steps to ensure that—
  - (i) no floor, roof or other part of the structure is overloaded with debris or material in a manner which would render it unsafe;
  - (ii) all reasonably practicable precautions are taken to avoid the danger of the structure collapsing when any part of the framing of a framed or partly framed building is removed, or when reinforced concrete is cut; and
  - (iii) precautions are taken in the form of adequate shoring or such other means as may be necessary to prevent the accidental collapse of any part of the structure or adjoining structure;
- (b) not require or permit any person to work under unsupported overhanging material, which has not been adequately supported, shored or braced;
- (c) take steps to ensure that any support, shoring or bracing contemplated in paragraph (b), is designed and constructed so that it is strong enough to support the overhanging material;
- (d) where the stability of an adjoining building, structure or road is likely to be affected by demolition work on a structure, take such steps as may be necessary to ensure the stability of such structure or road and the safety of persons;
- (e) ascertain as far as is reasonably practicable the location and nature of electricity, water, gas or other similar services which may in anyway, be affected by the work to be performed, and shall before the commencement of demolition work that may affect any such service, take the steps that may be necessary to render circumstances safe for all persons involved;
- (f) cause every stairwell used and every floor where work is being performed in a building being demolished, to be adequately illuminated by either natural or artificial means;
- (g) cause convenient and safe means of access to be provided to every part of the demolition site in which persons are required to work; and
- (h) erect a catch platform or net above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.

(5) A contractor shall ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless the area is effectively protected.

(6) Waste and debris shall not be disposed from a high place by a chute unless the chute—

- (a) is adequately constructed and rigidly fastened;
- (b) if inclined at an angle of more than 45 degrees to the horizontal, is enclosed on its four sides;
- (c) if of the open type, is inclined at an angle of less than 45 degrees to the horizontal;
- (d) where necessary, is fitted with a gate at the bottom end to control the flow of material; and
- (e) is discharged into a container or an enclosed area surrounded by barriers.

(7) A contractor shall ensure that every chute used to dispose of rubble is designed in such a manner that rubble does not free-fall and that the chute is strong enough to withstand the force of the debris traveling along the chute.

(8) A contractor shall ensure that equipment is not used on floors or working surfaces, unless such floors or surfaces are of sufficient strength to support the imposed loads.

(9) Where the risk assessment indicates the presence of asbestos, a contractor shall ensure that all asbestos related work is conducted in accordance with the provisions of the, Asbestos Regulations promulgated by Government Notice No.R.155 of 10 February 2002, as amended.

(10) Where the risk assessment indicates the presence of lead, a contractor shall ensure that all lead related work is conducted in accordance with the provisions of the, Lead Regulations promulgated by Government Notice No.R.236 of 28 February 2002 , as amended.

(11) Where the demolition work involves the use of explosives, a method statement is to be developed in accordance with the applicable explosives legislation, by an appointed person who is competent in the use of explosives for demolition work and the procedures therein are adhered to.

(12) A contractor shall ensure that all waste and debris is as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

## **Tunnelling**

**13.(1)** Any contractor performing tunneling activities or works, shall comply with such requirements as published under the Mine Health and Safety Act, 1996 (Act No.29 of 1996), as amended.

(2) Notwithstanding the provisions of subregulation (1), no person shall enter a tunnel, which has a height dimension less than 800mm.

### **Scaffolding**

**14.(1)** Every contractor using access scaffolding, shall ensure that such scaffolding, when used, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act.

(2) A contractor shall ensure that all scaffolding work operations are carried out under the supervision of a competent person who has been appointed in writing and that all scaffold erectors, team leaders and inspectors are competent to carry out their work.

### **Suspended platforms**

**15.(1)** A contractor shall ensure that all suspended platform work operations are carried out under the supervision of a competent person who has been appointed in writing, and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

(2) No contractor shall use or permit the use of a suspended platform, unless—

- (a) the design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;
- (b) in possession of a certificate of system design issued by a professional engineer, certificated engineer or a professional technologist for the use of the suspended platform system; and
- (c) he or she is, prior to the commencement of the work, is in possession of an operational compliance plan developed by a competent person based on the certificate of system design contemplated in paragraph (b) and applicable to the environment in which the system is being used, prior to the commencement of the work which must include proof of the—
  - (i) competent person who has been appointed for supervision;
  - (ii) competency of erectors, operators and inspectors;
  - (iii) operational design calculations which should comply with the requirements of the system design certificate;
  - (iv) performance test results;
  - (v) sketches indicating the completed system with the operational loading capacity of the platform;
  - (vi) procedures for and records of inspections having been carried out; and

- (vii) procedures for and records of maintenance work having been carried out:

Provided that subregulation (2) shall only become applicable six months from the date of promulgation of these regulations.

(3) A contractor making use of a suspended platform system shall forward a copy of the certificate of system design issued by a professional engineer, certificated engineer or professional technologist including a copy of the design calculations, sketches and test results, to the provincial director before commencement of the use of the system and must further indicate the intended type of work, the system would be used for.

(4) A contractor need not re-submit a copy of the certificate of system design contemplated in subregulation (3) for every new project: Provided that the environment in which the system is being used does not change to such an extent that the system design certificate is no longer applicable and, should uncertainty exist of the applicability of the system design certificate, the decision of a professional engineer, certificated engineer or professional technologist shall be decisive.

(5) A contractor shall ensure that the outriggers of each suspended platform—

- (a) are constructed of steel or any other material of similar strength and have a safety factor of at least four in relation to the load it is to carry; and
- (b) have suspension points provided with stop devices or other effective devices at the outer ends to prevent the displacement of ropes.

(6) The contractor shall ensure that—

- (a) the parts of the building or structure on which the outriggers are supported, are checked by means of calculations to ensure that the required safety factor is adhered to without risk of damage to the building or structure;
- (b) the suspension wire rope and the safety wire rope are separately connected to the outrigger;
- (c) each person on a suspended platform is provided with and wears a safety harness as a fall prevention device which must at all times, be attached to the suspended platform or to the anchorage points on the structure whilst on the suspended platform;
- (d) the hand or power driven machinery to be used for the lifting or lowering of the working platform of a suspended platform is constructed and maintained in such a manner that an uncontrolled movement of the working platform cannot occur;
- (e) the machinery referred to in paragraph (d) is so situated that it is easily accessible for inspection;
- (f) the rope connections to the outriggers are vertically above the connections to the working platform; and

(g) where the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of such height above the level of the working platform as to ensure the stability of the working platform.

(7) A contractor shall ensure that the suspended platform—

(a) is suspended as near as possible to the structure to which work is being done and, except when light work is being done, is secured at every working position to prevent horizontal movement between the suspended platform and the structure;

(b) is fitted with anchorage points to which workers shall attach the lanyard of the safety harness worn and used by the worker and such anchorage connections shall have sufficient strength to withstand any potential load applied to it; and

(c) is fitted with a conspicuous notice easily understandable by all workers working with the suspended platform, showing the maximum mass load which the suspended platform can carry.

(8) A contractor shall cause—

(a) the whole installation and all working parts of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification;

(b) the whole installation to be subjected to a performance test as determined by the standard to which the suspended platform was manufactured;

(c) the performance test contemplated in paragraph (b) to be done by a competent person appointed in writing with the knowledge and experience of erection and maintenance of suspended platforms or similar machinery and who shall determine the serviceability of the structures, ropes, machinery and safety devices before they are used following every time they are erected;

(d) the performance test contemplated in paragraph (b) of the whole installation of the suspended platform shall be subjected to a load equal to that prescribed by the manufacturer or, in the absence of such load, to a load of 110 per cent of the rated mass load, at intervals not exceeding 12 months and in such a manner that every part of the installation is stressed accordingly;

(9) Notwithstanding the provisions of subregulation (8), the contractor shall cause every hoisting rope, hook or other load-attaching device which forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person contemplated in subregulation (8) before they are used following every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

(10) A contractor shall ensure that the suspended platform supervisor appointed in terms of the provisions of subregulation (1), or the suspended platform inspector mentioned in subregulation (1), carries out a daily inspection of all the equipment prior to use, including establishing whether—

- (a) all connection bolts are secure;
- (b) all safety devices are functioning;
- (c) all safety devices are not tampered with or vandalised;
- (d) the maximum mass load of the platform is not exceeded;
- (e) the occupants in the suspended platform are using safety harnesses which have been properly attached;
- (f) there are no visible signs of damage to the equipment; and
- (g) all reported operating problems have been attended to.

(11) A contractor shall ensure that all inspection and performance test records are kept on the construction site at all times and made available to an inspector, client, client's agent or employee upon request.

(12) A contractor shall ensure that all employees required to work or to be supported on a suspended platform are—

- (a) physically and psychologically fit to work safely in such an environment by being in possession of a medical certificate of fitness;
- (b) competent in conducting their work safely relating to suspended platforms and the training which employees receive or had received must include at least—
  - (i) how to access and egress the suspended platform safely;
  - (ii) how to correctly operate the controls and safety devices of the equipment;
  - (iii) information on the dangers related to the misuse of safety devices; and
  - (iv) information on the procedures to be followed in the case of—
    - (aa) an emergency;
    - (bb) the malfunctioning of equipment;
    - (cc) the discovery of a suspected defect in the equipment; and
  - (v) instructions on the proper use of safety harnesses.

(13) Where the outrigger is to be moved, the contractor shall ensure that only persons trained and competent to effect such move, perform this task and that an inspection be carried out and the results thereof be recorded by the competent person prior to re-use of the suspended platform.

(14) A contractor shall ensure that the suspended platform is properly isolated after use at the end of each working day such that no part of the suspended platform will present a danger to any person thereafter.

### **Boatswain's chairs**

16.(1) A contractor shall ensure that every boatswain's chair or similar device is securely suspended and is constructed in such a manner so as to prevent any occupant from falling therefrom.

(2) The contractor shall ensure that an inspection is carried out prior and a performance test immediately after, the boatswain chair has been erected and thereafter a visual inspection should be carried out on a daily basis prior to use.

### **Material hoists**

17.(1) A contractor shall ensure that every material hoist and its tower have been constructed of sound material in accordance with the generally accepted technical standards and are strong enough and free from defects.

(2) A contractor shall cause the tower of every material hoist to be—

- (a) erected on firm foundations and secured to the structure or braced by steel wire guy ropes and to extend to such a distance above the highest landing as to allow a clear and unobstructed space of at least 900 mm for overtravel;
- (b) enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material hoist, with walls or other effective means to a height of at least 2100 mm from the ground or floor level; and
- (c) provided with a door or gate at least 2100 mm in height at each landing and such door or gate shall be kept closed, except when the platform is at rest at such a landing.

(3) A contractor shall cause—

- (a) the platform of every material hoist to be designed in such a manner that it shall safely contain the loads being conveyed and that the combined weight of the platform and the load does not exceed the designed lifting capacity of the hoist;
- (b) the hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist; and
- (c) every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when the power is not being supplied to the hoisting machinery.

(4) No contractor shall require or permit trucks, barrows or material to be conveyed on the platform of a material hoist and no person shall so convey trucks, barrows or material unless

such articles are so secured or contained in such a manner that displacement thereof cannot take place during movement.

(5) A contractor shall cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material hoist, to be affixed around the base of the tower and at each landing.

(6) A contractor of a material hoist shall not require or permit any person to operate such a hoist, unless the person is competent in the operation thereof.

(7) No contractor shall require or permit any person to ride on a material hoist.

(8) A contractor shall cause every material hoist—

(a) to be inspected on a daily basis by a competent person who has been appointed in writing and has the experience pertaining to the erection and maintenance of material hoists or similar machinery.

(b) inspection contemplated in paragraph (a), to include the determination of the serviceability of the entire material hoist including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices.

(c) inspection result to be entered and signed in a record book which shall be kept on the premises for that purpose.

(d) to be properly maintained and that the maintenance records in this regard are kept on site.

### **Batch plants**

**18.(1)** A contractor shall ensure that all batch plants are operated and supervised by a competent person who has been appointed in writing.

(2) A contractor shall ensure that the placement and erection of a batch plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.

(3) A contractor shall ensure that all devices to start and stop a batch plant are provided and that these devices are—

(a) placed in an easily accessible position; and

(b) constructed in such a manner as to prevent accidental starting.

(4) The contractor shall ensure that the machinery and plant selected is suitable for the task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means.

(5) No person shall be permitted to remove or modify any guard or safety equipment relating to a batch plant, unless authorised to do so by the appointed person as contemplated in subregulation (1).

(6) A contractor shall ensure that all persons authorised to operate the batch plant are fully—

- (a) aware of all the dangers involved in the operation thereof; and
- (b) conversant with the precautionary measures to be taken in the interest of health and safety.

(7) No person supervising or operating a batch plant shall authorise any other person to operate the plant, unless such person is competent to operate such machinery.

(8) A contractor shall ensure that all precautionary measures as stipulated for confined spaces in the General Safety Regulations promulgated by Government Notice No.R.1031 dated 30 May 1986, as amended, are adhered to when entering any silo.

(9) A contractor shall ensure that a record is kept of any repairs or maintenance to a batch plant and that it is made available, on site, to an inspector, client, client's agent or employee upon request.

(10) A contractor shall ensure that all lifting machines and lifting tackle used in the operation of a batch plant complies with the requirements of the Driven Machinery Regulations promulgated by Government Notice No.R.295 dated 26 February 1988, as amended;

(11) A contractor shall ensure that all precautionary measures are adhered to regarding the usage of electrical equipment in explosive atmospheres, when entering a silo, as contemplated in the Electrical Installation Regulations promulgated by Government Notice No.R. 2920 dated 23 October 1992, as amended.

### **Explosive powered tools**

**19.(1)** No contractor shall use or permit any person to use an explosive powered tool, unless—

- (a) it is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and
- (b) the firing mechanism is so designed that the explosive powered tool will not function unless—
  - (i) it is held against the surface with a force of at least twice its weight; and
  - (ii) the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle:

Provided that the provisions of this subregulation shall not apply to explosive powered tools in which the energy of the cartridge is transmitted to the bolts, nails or similar relevant objects by means of an intermediate piston which has a limited distance of travel.

(2) A contractor shall ensure that—

- (a) only cartridges suited for the explosive powered tool and the work to be performed are used;

- (b) the explosive powered tool is cleaned and examined daily before use and as often as may be necessary for its safe operation by a competent person who has been appointed;
- (c) that the safety devices are in proper working order prior to use;
- (d) when not in use, the explosive powered tool and the cartridges are locked up in a safe place, which is inaccessible to unauthorised persons;
- (e) the explosive powered tool is not stored in a loaded condition;
- (f) a warning notice is displayed in a conspicuous manner wherever the explosive powered tool is used;
- (g) the issuing and collection of cartridges and nails or studs is-
  - (i) controlled and done in writing by a person having been appointed in writing; and
  - (ii) recorded in a register and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges;

(3) No contractor shall permit or require any person to use an explosive powered tool unless such person has been—

- (a) provided with and uses suitable protective equipment; and
- (b) trained in the operation, maintenance and use of such a tool.

## **Cranes**

**20.** Notwithstanding the provisions of the Driven Machinery Regulations promulgated by Government Notice No.R.295 of 26 February 1988, as amended, a contractor shall ensure that where tower cranes are used—

- (a) account is taken of the effects of wind forces on the structure;
- (b) account is taken of the bearing capacity of the ground on which the tower crane is to stand;
- (c) the bases for the tower cranes and tracks for rail-mounted tower cranes are firm and level;
- (d) the tower cranes are erected at a safe distance from excavations;
- (e) there is sufficient clear space available for erection, operation and dismantling;
- (f) the tower crane operators are competent to carry out the work safely; and
- (g) the tower crane operators are physically and psychologically fit to work in such an environment by being in possession of a medical certificate of fitness.

## **Construction vehicles and mobile plant**

**21.(1)** A contractor shall ensure that all construction vehicles and mobile plants—

- (a) are of an acceptable design and construction;
- (b) are maintained in a good working order;
- (c) are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- (d) are operated by workers who-
  - (i) have received appropriate training and been certified competent and been authorised to operate such machinery; and
  - (ii) are physically and psychologically fit to operate such construction vehicles and mobile plant by being in possession of a medical certificate of fitness;
- (e) have safe and suitable means of access;
- (f) are properly organised and controlled in any work situation by providing adequate signaling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- (g) are prevented from falling into excavations, water or any other area lower than the working surface by installing adequate edge protection, which may include guardrails and crash barriers;
- (h) where appropriate, are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- (i) are equipped with an electrically operated acoustic signaling device and a reversing alarm; and
- (j) are on a daily basis inspected prior to use, by a competent person who has been appointed in writing and the findings of such inspection is recorded in a register.

**(2)** A Contractor shall furthermore ensure that—

- (a) no person rides or be required or permitted to ride on any construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose;
- (b) every construction site is organised in such a way that, as far as is reasonably practicable, pedestrians and vehicles can move safely and without risks to health;

- (c) the traffic routes are suitable for the persons using them, sufficient in number, in suitable positions and of sufficient size;
- (d) every traffic route is, where necessary indicated by suitable signs for reasons of health or safety;
- (e) all construction vehicles and mobile plant left unattended at night, adjacent to a freeway in normal use or adjacent to construction areas where work is in progress, shall have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant;
- (f) bulldozers, scrapers, loaders, and other similar mobile plant are, when being repaired or when not in use, fully lowered or blocked with controls in a neutral position, motors stopped and brakes set;
- (g) whenever visibility conditions warrant additional lighting, all mobile plant are equipped with at least two headlights and two taillights when in operation;
- (h) tools and material are secured in order to prevent movement when transported in the same compartment with employees;
- (i) vehicles used to transport employees have seats firmly secured and adequate for the number of employees to be carried; and
- (j) when workers are working on or adjacent to public roads, reflective indicators are provided and worn by the workers.

### **Electrical installations and machinery on construction sites**

**22.**Notwithstanding the provisions contained in the Electrical Installation Regulations promulgated by Government Notice No.R.2920 of 23 October 1992 and the Electrical Machinery Regulations promulgated by Government Notice No. R.1593 of 12 August 1988, respectively, as amended, a contractor shall ensure that—

- (a) before construction commences and during the progress thereof, adequate steps are taken to ascertain the presence of and guard against danger to workers from any electrical cable or apparatus which is under, over or on the site;
- (b) all parts of electrical installations and machinery are of adequate strength to withstand the working conditions on construction sites;
- (c) in working areas where the exact location of underground electric power lines is unknown, employees using jackhammers, shovels or other hand tools which may make contact with a power line, are provided with insulated protective gloves or otherwise that the handle of the tool being used is insulated;
- (d) all temporary electrical installations are inspected at least once a week and electrical machinery on a daily basis before use on a construction site by competent persons and the records of these inspections are recorded in a register to be kept on site; and

- (e) the control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing.

### **Use and temporary storage of flammable liquids on construction sites**

**23.**Notwithstanding the provisions for the use and storage of flammable liquids as determined in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that—

- (a) where flammable liquids are being used, applied or stored at the workplace concerned, this is done in such a manner which would cause no fire or explosion hazard, and that the workplace is effectively ventilated: Provided that where the workplace cannot effectively be ventilated-
  - (i) every employee involved is provided with a respirator, mask or breathing apparatus of a type approved by the chief inspector, and
  - (ii) steps are taken to ensure that every such employee, while using or applying flammable liquid, uses the apparatus supplied to him or her;
- (b) no person smokes in any place in which flammable liquid is used or stored, and such contractor shall affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking;
- (c) flammable liquids on a construction site is stored in a well ventilated reasonably fire resistant container, cage or room and kept locked with proper access control measures in place;
- (d) an adequate amount of efficient fire-fighting equipment is installed in suitable locations around the flammable liquids store with the recognised symbolic signs;
- (e) only the quantity of flammable liquid needed for work on one day is to be taken out of the store for use;
- (f) all containers holding flammable liquids are kept tightly closed when not in actual use and, after their contents have been used up, to be removed from the construction site and safely disposed of;
- (g) where flammable liquids are decanted, the metal containers are bonded or earthed; and
- (h) no flammable material such as cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

### **Water environments**

**24.(1)** A contractor shall ensure that where construction work is done over or in close proximity to water, provision is made for—

- (a) preventing workers from falling into water; and
- (b) the rescuing of workers in danger of drowning.

(2) A contractor shall ensure that where a worker is exposed to the risk of drowning by falling into the water, a lifejacket is provided to and worn by the worker.

### **Housekeeping on construction sites**

**25.**Notwithstanding the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No.R 2281 dated 16 October 1987, as amended, a contractor shall ensure that—

- (a) suitable housekeeping is continuously implemented on each construction site, including provisions for the—
  - (i) proper storage of materials and equipment; and
  - (ii) removal of scrap, waste and debris at appropriate intervals;
- (b) loose materials required for use, are not placed or allowed to accumulate on the site so as to obstruct means of access to and egress from workplaces and passageways;
- (c) waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out regulation 12(6); and
- (d) construction sites in built-up areas, adjacent to a public way are suitably and sufficiently fenced off and provided with controlled access points to prevent the entry of unauthorised persons.
- (e) a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under, or fence off the danger area if work is being performed above such entrance, passageway, or place so as to ensure that all persons are kept safe where there is a danger or possibility of persons being struck by falling objects.

### **Stacking and storage on construction sites**

**26.**Notwithstanding the provisions for the stacking of articles contained in the General Safety Regulations promulgated by Government Notice No.R1031 dated 30 May 1986, as amended, a contractor shall ensure that—

- (a) a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site;
- (b) adequate storage areas are provided;
- (c) there are demarcated storage areas; and
- (d) storage areas are kept neat and under control.

### **Fire precautions on construction sites**

**27.** Subject to the provisions of the Environmental Regulations for Workplaces promulgated by Government Notice No.R.2281 of 16 October 1987, as amended, every contractor shall ensure that—

- (a) all appropriate measures are taken to avoid the risk of fire;
- (b) sufficient and suitable storage is provided for flammable liquids, solids and gases;
- (c) smoking is prohibited and notices in this regard are prominently displayed in all places containing readily combustible or flammable materials;
- (d) in confined spaces and other places in which flammable gases, vapours or dust can cause danger—
  - (i) only suitably protected electrical installations and equipment, including portable lights, are used;
  - (ii) there are no flames or similar means of ignition;
  - (iii) there are conspicuous notices prohibiting smoking;
  - (iv) oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and
  - (v) adequate ventilation is provided;
- (e) combustible materials do not accumulate on the construction site;
- (f) welding, flame cutting and other hot work are done only after the appropriate precautions as required have been taken to reduce the risk of fire;
- (g) suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order;
- (h) the fire equipment contemplated in paragraph (g) is inspected by a competent person, who has been appointed in writing, in the manner indicated by the manufacturer thereof;
- (i) a sufficient number of workers are trained in the use of fire-extinguishing equipment;
- (j) where appropriate, suitable visual signs are provided to clearly indicate the escape routes in the case of a fire;
- (k) the means of escape is kept clear at all times;
- (l) there is an effective evacuation plan providing for all—
  - (i) persons to be evacuated speedily without panic;
  - (ii) persons to be accounted for, and

- (iii) plant and processes to be shut down; and
- (m) a siren is installed and sounded in the event of a fire.

### **Construction welfare facilities**

**28.(1)** Notwithstanding the construction site provisions contained in the Facilities Regulations promulgated by Government Notice No.R. 2362 of 5 October 1990, as amended, a contractor shall, depending on the number of workers and the duration of the work, provide at or within reasonable access of every construction site, the following clean and maintained facilities:—

- (a) at least one shower facility for every 15 workers;
- (b) at least one sanitary facility for every 30 workers;
- (c) changing facilities for each sex; and
- (d) sheltered eating areas.

(2) A contractor shall provide reasonable and suitable living accommodation for the workers at construction sites which are remote from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

### **Approved inspection authorities**

**29.(1)** The Chief Inspector may approve as an Inspection Authority any organisation that has been accredited in terms of the provision of the Act and these regulations.

(2) The Chief Inspector may at any time withdraw any approval of an approved inspection authority, subject to section 35 of the Act.