Contractors' Environmental Management and Waste Management Plan Guidelines

Contents

Environmental Management Plan 7

1 Contractor'sEnvironmental Management Plan 8

Introduction 8

What is a CEMP? 8

Contents of the CEMP 8

General project information 8

Communication and complaint resolution 9

Environmental issues 9

Air quality 9

Addressing air quality in the CEMP 10

Noise 10

Addressing noise in the CEMP− standard construction hours 10

Addressing noise in the CEMP − construction outside of standard hours (night works) 11

Site contamination 11

Addressing site contamination in the CEMP 12

Waste 12

General waste management 12

Hazardous waste 12

Use of waste fill 13

Addressing waste in the CEMP 13

Water quality 13

Addressing water quality in the CEMP 13

Monitoring 14

Training 15

Other general measures 15

2 Waste Management Plan 16

Pre-Construction 16

During Construction 18

Post Construction 18

3 Occupational health and safety 19

General measures for health and safety 20

Stability and Strength 20
Energy installations 20
Traffic areas and escape routes 20
Detection and fire fighting 20
Ventilation 21
Exposure to hazards 21
Temperature 21
Natural and artificial lighting of the workplace, utility rooms and traffic areas 21
Doors and gates 22
Traffic surfaces - dangerous zones 22
Unburdened movement at the workplace 22
Working at height 23
b) Work must be properly planned, supervised and carried out by competent people with the skills, knowledge and experience to do the job. Contractor must use the right type of equipment for working at height. It is necessary to take a sensible approach when considering precautions. Before working at height, contractor should: 23
- avoid work at height where it's *reasonably practicable* to do so, ... 23
- where work at height cannot be easily avoided, prevent falls using either an existing place of work that is already safe or the right type of equipment, ... 23
- minimise the distance and consequences of a fall, by using the right type of equipment where the risk cannot be eliminated, ... 23
First Aid 23
Utility rooms 23
Personal Protective Equipment 25
Personal Apparel 25
Head Protection 25
Eye and Face Protection 25
Hand Protection 25
Foot Protection 25
Hearing Conservation 26
Housekeeping and Access at Site 26
Stairways and Ladders 26
Scaffolds 27

Tools and Equipment 28
Vehicles and Mobile Equipment 28
Electrical 28
4 Fire Hazard 29
Identify sources of ignition 29
Identify sources of combustible material 30
Identify sources of oxygen 30
Identify people most at risk 31
Evaluate, remove, reduce and protect from risk 31
Reducing the risk of a fire occurring 31
Remove or reduce sources of ignition 32
Remove or reduce combustible material 33
Remove or reduce sources of oxygen 33
General fire precautions 33
Fire prevention 34
Design phase 34
Fire safety and prevention management 34
Fire risk assessment 34
Fire safety management plan 34
Fire protection 35
Hot work 35
Security against arson 35
Smoking 36
Waste materials 36
Storage of flammable liquids and gases 36
Temporary electrics and gas 37
Stored materials 37
Plant and vehicles 37
Temporary buildings and accommodation 37
Electrical installations 38
Bonfires 38
Arson and site security 39

Fire safety procedures 39
Firefighting equipment 40
Liaison with the fire and rescue service 40
Appendix 1 41
List of Laws and regulations relevant for Plans 41
Appendix 2 42
Waste catalog 42
Appendix 3 44
Checklist for monitoring Plans 44
Appendix 4 47
List of Laws and regulations relevant forOccupational Health and Safety an Fire Hazards 47
- Rulebook on the manner and procedure of risk assessment in the workplace and in the work environment (Official gazette of the republic of Serbia 72/2006, 84/2006, 30/2010, 102/2015); 47
- Law on safety and health at work (Official gazette of the republic of Serbia101/2005, 91/2015 and 113/2017 - other law); 47
- Rulebook on protection at work in the execution of construction works (Official gazette of the republic of Serbia53/97); 47
- Rulebook on the procedure of reviews and checked equipment for work and testing the conditions of the working environment (Official gazette of the republic of Serbia. 94/2006, 108/2006, 114/2014, 102/2015); 47
- Rulebook of preventive measures for safety and health work for using working equipment (Official gazette of the republic of Serbia23/2009, 123/2012, 102/2015, 101/2018); 47
- Rulebook of preventive measures for safety and health work in use of equipment for personal protection at work (Official gazette of the republic of Serbia, no. 92/2008 and 101/2018); 47
- Rulebook on personal protection equipment (Official gazette of the republic of Serbia no. 100/2011); 47
- Rulebook on previous and periodic medicinal reviews of employees in working places with increased risk (Official gazette of the republic of Serbia, no. 120/2007, 93/2008 and 53/2017) 47
- Regulation on safety and health care records (Official gazette of the republic of Serbia, no. 62/2007 and 102/2015) 47
- Rulebook of content and the manner of approval of a report on work injury and professional diseases (Official gazette of the republic of Serbia 72/2006, 84/2006, 4/2016 and 106/2018) 47

- Rulebook of preventive safety and health measures for workplaces with noise exposure (Official gazette of the republic of Serbia, no. 96/2011 and 78/2015)..... 47
- Rulebook of preventive safety and health measures for workplaces with vibration exposure (Official gazette of the republic of Serbia no. 93/2011) 47
- Rulebook of safety and health preventive measures for working with handicraft transfer (Official gazette of the republic of Serbia no. 106/2009) 47
- Rulebook on preventive measures for safe and healthy work with asbestos materials (Official gazette of the republic of Serbia, no. 106/2009 of 17.12.2009. 6/2010 and 15/2010).. 47
- Rulebook on content of elaborate of construction site arrangement (Official gazette of the republic of Serbia, no. 121/2012 and 102/2015) 47
- Rulebook on work protection in construction industry (Official gazette of the republic of Serbia, no. 53/97) 47
- Regulation on safety and health at work on temporary or movable construction sites (Official gazette of the republic of Serbia, no. 14/2009 and 95/2010)..... 47
- Lawon fire protection(Official Gazette of the Republic of Serbia, No. 111/2009, 20/2015, 87/2018 and 87/2018 - other laws)..... 47

The purpose of this document is to provide good starting point to create a Contractor Environmental Management Plan and Waste Management Plan. Contractors will need to build upon and adapt the section headings, text and management plans to suit each project.

Environmental Management Plan

An Environmental Management Plan (EMP) can be defined as "an environmental management tool used to ensure that undue or reasonably avoidable adverse impacts of the construction, operation and decommissioning of a project are prevented; and that the positive benefits of the projects are enhanced".

The overall purpose of the guideline is twofold: to inform and guide the preparation and implementation of EMPs in a manner that promotes the effectiveness of EMPs; and to assist authorities and other reviewers in objectively evaluating the quality of EMPs. Key features of this guideline are that it: Is applicable to a range of types and scales of projects or developments, from projects with a low level of environmental risk to those with high environmental risk;

The guideline for EMPs describes the envisaged scope and content of an EMP, covering both the preparation and implementation stages of an EMP process, and a set of review criteria has been identified. It must emphasized that these criteria are not intended to provide a prescriptive list of requirements for each and every EMP, but to provide prompts for reviewers regarding the scope and level of detailed appropriate for an EMP. Looking ahead, EMPs provide an essential tool for ensuring that the mitigation of negative impacts and enhancement of positive impacts is carried out effectively during the project life-cycle. It is therefore intended that this guideline be used in the spirit of continual improvement, to assist in promoting best practice in environmental management, in a manner that is pragmatic, efficient and cost-effective.

1 Contractor'sEnvironmental Management Plan

Introduction

Construction activities include demolition work, site preparation, building maintenance or repair work, the operation of vehicles entering or leaving the construction site, and activities, at or within the immediate vicinity of a construction site, of persons who perform work at the site, or work connected with work at the site. During the site preparation and construction phase there is the potential for environmental and social impacts to arise. Typical activities relevant to the construction phase will include amongst others environmental impacts associated with waste arising and disposal, fugitive dust, noise, effluent discharges potential chemical spills, ecological disturbance, erosion and traffic,air emissions, site contamination, need to be managed to prevent impacts on the land subject to development, and on nearby land uses and the natural environment. In addition, suitable provisions are required to ensure good worker management relationships and conditions and to protect and enhance the quality of life for communities in the Project area. The Contractor(s) are responsible for developing and implementing their own management plans and/or procedures in line with the requirements the CEMP.

What is a CEMP?

A CEMP describes how activities undertaken during the construction phase of development will be managed to avoid or mitigate negative environmental impacts on site and how those environmental management requirements will be implemented.

Contents of the CEMP

The CEMP needs to contain sufficient information for the relevant authority to be confident that potential impacts on the environment, and public health and amenity have been identified, and suitable measures to mitigate those impacts will be applied prior to and during construction. The following information is not a complete description of the contents of a CEMP. Rather, it is a description of the information that would expect to be included in a CEMP in order to manage construction activities. In preparing a CEMP the proponent will need to be aware of their own management systems, environmental or otherwise, and how the CEMP would work with those systems.

General project information

The CEMP should include the following general information about the project:

• Description of the site location and the receiving environment, including the location of sensitive receivers;

• Description of the project construction works to be undertaken, including timeframes and construction hours;

• Identification and analysis of potential environmental impacts, including environmental hazards and risks, proposed mitigation measures and any residual risks;

• Identification and description of the management measures to be implemented to mitigate linked source–receptor–exposure pathways;

• Identification of a person or persons with responsibility for implementing the CEMP;

• Identification of appropriate reporting and verification measures;

Communication and complaint resolution

Due to the nature of construction activities, there is a potential for nearby residents to be adversely affected. Maintaining open and constructive communications with potentially affected parties can help to reduce conflicts and complaints. The CEMP should describe the measures to engage and maintain communication with those who may be affected by construction activities and to manage any complaints that are received. Those measures should include:

- identification of the person with responsibility for managing communications and complaints;
- a communications plan that outlines how and when consultation with potentially affected parties will be undertaken, and how potentially affected parties will be informed in advance of works that may have an off-site impact;
- maintenance of a complaint register to record the following information:
- the name and address of any complainant ;
- the time and date the complaint was received;
- description of the complaint;
- the activity or activities and any associated equipment that gave rise to the complaint;
- the action that was taken to resolve the issues that led to the complaint;
- the date the complaint was resolved and documentation of complainant's level of satisfaction with the actions to resolve the issue;
- Notifying the relevant authority of complaints regarding environmental nuisance (particularly noise and dust) and the actions undertaken to resolve the complaint, and of any non-conformance with the CEMP that results in environmental nuisance.

Environmental issues

Air quality

Demolition of existing development, broad-scale removal of vegetation cover, road construction, landscaping works, drainage construction and vehicle movements, may leave soil surfaces exposed and vulnerable to the erosive powers of wind. Creation of dust during construction activities can have an impact on the health and amenity of those living or working near a construction site.

Addressing air quality in the CEMP

The CEMP should describe the measures to be taken to minimize air quality impacts from construction activities. Those measures should include:

- minimizing vegetation clearance, clearing in stages, stabilization of cleared areas by regular light watering or use of matting or coarse material to minimize soil transport by wind;
- Providing appropriate equipment, technical and technological solutions, ensuring that the emission of pollutants into the air meets the prescribed limit values;
- managing soil stockpiles through stabilization, light watering, or the use of covers;
- limiting the movement of soil and earth and use of high-speed abrasive disc saws and sanders during windy periods;
- maintaining the building during design, construction and use in the way not to release pollutants in the air in excess of the emission limit values;
- minimizing the lifting height of the loader bucket when transferring soil or rubble from front-end loaders to trucks, and controlling its unloading speed to reduce wind-borne dust;
- controlling the speed of dumping from tip trucks;
- covering or stabilizing materials during transport into and within the construction site;
- preventing soil from leaving the site via traffic movement to prevent the creation of dust in dry conditions;
- minimizing wheel-generated dust by watering roadways or preparing roadways with coarse gravel or other road coverings such as bitumen or concrete;

Noise

Noise is an inherent part of construction activities as a result of demolition work, site preparation, construction of buildings, and the operation of vehicles within, entering or leaving a construction site. This noise may disturb a person's everyday life or working environment, and cause adverse health effects when sleep is disturbed. Construction Noise deals with noise arising from construction activities on a site that requires development authorization and it aims to achieve a balance between allowing that work to proceed while minimizing its impact on neighboring properties.

Addressing noise in the CEMP– standard construction hours

In recognition of the inherently noisy and temporary nature of construction activities, the Noise Policy states standard construction hours during which fixed noise limits do not apply. Notwithstanding, the general environmental duty still applies and it is a requirement of the Noise Policy that all reasonable and practicable measures be taken to minimize or avoid off-site noise impacts from the construction activity. The CEMP should demonstrate how this would be achieved throughout construction – e.g. the 'standard construction hours' are Monday to Saturday (excluding public holidays) between 7 am and 7 pm. For construction within the standard hours, the CEMP should identify the means by which noise will be managed. The CEMP should describe the following:

- hours of operation;
- implementation of adequate sound protection, which ensures that the noise emitted from technical and other parts of buildings under the prescribed conditions of use and maintenance of devices and equipment, or during the performance of the planned activities, does not exceed the prescribed limit values;
- measures to be taken to minimize noise from construction activities resulting in noise with an adverse impact on amenity, including:
  i) locating noisy equipment or processes so that their impact on neighboring premises is minimized (whether by maximizing the distance to the premises, using structures or elevations to create barriers or otherwise);
  ii) shutting or throttling equipment down such as generators, bobcats, cranes and the like whenever not in actual use;
  iii) ensuring that noise reduction devices such as mufflers are fitted and operating effectively;
  iv) ensuring that equipment is not operated if maintenance or repairs would eliminate or significantly reduce a characteristic of noise resulting from its operation that is audible at noise-affected premises;
  v) operating equipment and handling materials so as to minimize impact noise (such as avoiding dropping materials from height);
  vi) using off-site or other alternative processes that eliminate or lessen resulting noise;

Addressing noise in the CEMP – construction outside of standard hours (night works)

Construction outside of the standard hours outlined above may be undertaken provided the activities do not give rise to noise having an adverse impact on amenity. A noise is considered to have an adverse impact on amenity if measurements taken in relation to the noise source and noise affected premises show. If construction outside of the standard construction hours is proposed, in addition to the information required for work within the standard construction hours, the CEMP should include an acoustic assessment that is prepared by a suitably qualified and experienced acoustic engineer. The acoustic assessment will need to either demonstrate that noise from the proposed construction activities will not result in an adverse impact on amenity by meeting the above noise levels, or provide details of what noise mitigation measures are required in order to meet the above noise levels. Such noise mitigation measures should be documented in the CEMP.

Site contamination

Site contamination is an important environmental, health, economic and planning issue and can have implications for land owners and occupiers, developers, councils, planning authorities, government and local communities. Site contamination is often detected during assessment required as part of the planning approval processes associated with the subdivision, development or redevelopment of a parcel of land.

In the vast majority of cases the process of remediation and/or installation of mitigation measures are likely to take place during the construction phase because of the efficiencies that can be obtained. This will necessitate preparing a CEMP to address matters of appropriate treatment for any site contamination. It may be the case that a CEMP will require the development and implementation of other supporting documents such as site management plans or reports which confirm the appropriate completion of required works and the suitability of the site for its intended use. Depending on the nature of issues at the site and the sensitivity of the proposed change of use, this may require the engagement of an auditor and the completion of a site contamination audit report. Any site contamination issues should be addressed by a suitably qualified and experienced site contamination consultant.

Addressing site contamination in the CEMP

The CEMP should identify the means by which site contamination will be managed, and should describe the following:

- assessment of site contamination consistent with the process described. Where required, remediation goals, objectives and endpoints should be identified in accordance with relevant EPA guidance;
- measures to be undertaken when potential site contamination is encountered during construction processes;
- measures to be undertaken to remove underground storage systems, manage any contaminated soil or groundwater, and to validate excavations prior to backfilling or replacement of underground storage systems.

Waste

General waste management

Waste materials that may be generated during demolition and construction include concrete, steel, aluminium, plasterboard, bricks and tiles, plastic and glass… Effective construction planning can minimize the production of waste, and appropriate storage of wastes particularly suitable source separation of waste materials, can greatly improve recycling rates and potentially lower disposal fees. The waste management hierarchy provides a framework to maximize the useful life of materials for instances in which waste cannot be avoided. Waste from construction and building sites should be managed in accordance with the waste management policy. Waste that is produced must be kept on-site and managed to prevent nuisance such as litter, dust and vermin, and to stop leachate from entering stormwater drains.

Hazardous waste

Asbestos-containing materials were used extensively in some buildings, structures, plant and equipment and may be encountered during demolition activities, along with other hazardous materials. Asbestos-containing materials and other hazardous materials need to be handled, transported and treated or disposed of in accordance with laws and regulations.

Use of waste fill

Particular waste streams may be suitable for beneficial reuse as fill. However, risks to the environment and human health may arise from the use of inappropriate waste materials or the filling of land in inappropriate locations. Materials that may be suitable for use as waste derived fill include waste soil, clay, rock, sand or other natural mineralogical matter that contain no other wastes, clean crushed concrete, bricks and ceramics, or mineralogically based homogenous industrial residues. To ensure that waste derived fill is being used sustainably, proponents are required to address the considerations, and comply with the processes.

Addressing waste in the CEMP

The CEMP should identify the means by which general waste and waste derived fill will be managed. It should demonstrate that:

- General waste produced during construction will be managed in accordance with the waste management laws and regulations;
- There will be a special space on site for temporary waste disposal;
- On site will be provided necessary conditions and equipment for the collection, sorting and temporary storage of various waste materials (municipal and packaging waste, organic or process waste, recyclable material, waste from cleaning of separators of grease and oil etc)
- All kinds of waste, dangerous and other waste, will be handed overto the operator with whom the contract is concluded, which has the appropriate permit for waste management (storage, treatment, disposal, etc.).

Water quality

Construction activities disturb soil, which is easily eroded and moved off the site into storm water drains, becoming a major source of sediment pollution in watercourses. While the principle pollutant from construction activities is sediment, there are many other pollutants generated, and activities such as concreting, plastering and painting must be managed to prevent impacts to our waterways. Construction can also disturb acid sulfate soils causing the creation of acidic conditions that can affect surface and groundwater quality.

To fulfill the obligations of the policy and ensure these pollutants do not move off site, it is strongly recommended that all building or construction sites undertake erosion, sediment and drainage control management practices.

Addressing water quality in the CEMP

The CEMP should identify the means by which construction activities will be managed to prevent impacts on water quality. It should include the following:

- to plan and perform internal sewage system (for atmospheric and faecal wastewater);
- Sanitary-faecal waste water must lead to the city sewage network, and in the absence of city sewage, it is necessary to take faecal wastewater into a watertight septic tank, until the site location is maintained with sewage infrastructure;
- Provide controlled acceptance of potentially polluted atmospheric waters from internal traffic, manipulative surfaces and parking, as well as its treatment in oil separator, which ensures that the quality of purified water meets the criteria prescribed for discharging into a public sewage system or a particular recipient;performs regular control of separators and precipitators and entrusts the emptying of the same to an authorized organization; keeps a proper record of the cleaning of the mentioned equipment and devices;
- If necessary, to provide appropriate treatment of technological wastewater, which ensures the prescribed emission requirements, that is, the prescribed conditions for discharging into the public sewage system or a specific recipient;
- the means by which hard waste, residues and wastes generated by concrete works, brick works and brick cutting, painting, plastering and the like will be managed to prevent the entry of pollutants into the stormwater system;
- how soil erosion will be minimized (if necessary):

    (1) avoiding soil disturbance – all activities should be timed and staged to minimize the time and extent to which soil is exposed to water and wind;

    (2) controlling water movement into and around the site – water within the site should be diverted around areas where soil has been disturbed and flow velocities should be minimized;

    (3) stabilizing all disturbed areas as quickly as possible.

Monitoring

It may be necessary for monitoring to be undertaken to determine whether construction activities are impacting on the environment.

Preparation of a monitoring plan as part of a CEMP ensures the monitoring is conducted effectively and consistently and will deliver reliable, good quality data. Monitoring, in the broad sense, can also include visual evidence as well as a complaints register.

The monitoring plan in the CEMP should include the following:

- the monitoring objective;
- the criteria against which monitoring results will be assessed;
- the quantity and nature of emissions monitored;

- description of the receiving environment;
- a map showing the sampling locations (including control site locations), major infrastructure and sensitive environmental receptors;
- the sampling times and/or frequency;
- parameters to be measured and analyzed, including analytical method;
- sampling procedures including sampling methods and equipment, calibration procedures, filtering, decontamination and preservation techniques;
- quality assurance systems, including quality control samples (e.g. blanks and duplicates);
- the method and frequency of reporting (internally, to the relevant authority);

**Recommended checklist for monitoring to be taken by site manager or dedicated person – Appendix 3*

Training

To ensure the CEMP is implemented effectively, employees and contractors should be trained in environmental awareness and their responsibilities under the CEMP. This should be described in the CEMP. Environmental training should include:

- a site induction the content and requirements of the CEMP, and responsibilities of all employees and contractors to ensure implementation of the CEMP and to consider environmental impacts;
- specific training for individuals who have responsibilities for particular environmental issues such as noise or dust reduction;
- emergency response training to manage unforeseen environmental incidents;
- a means for employees and contractors to demonstrate an understanding of the CEMP and competency in environmental management.

Other general measures

1. It is necessary to arrange green areas of free surfaces (lawns, bushy and high vegetation) in accordance with the project of horticultural arrangement.

2. To be sure that spatial planning and use of natural resources and goods is done in accordance with spatial and urban plans and other plans;

3. Any person who degrades the environment is obliged to perform remediation or in some other way removes the degraded environment in accordance with the rehabilitation and remediation projects ;

4. It is necessary to submit data for the registers of sources of pollution of the environment;

5. It is necessary to implement the necessary accident protection measures;

6. It is necessary to use ecological energy products;

2 Waste Management Plan

Waste Management Plan should provide consistent guidance on waste management in relation to construction activities and to encourage increased diversion of waste from landfill.

A WMP sets out how resources will be managed and waste controlled at all stages during a constructionproject.

A WMP should cover:

- Who will be responsible for resource management;
- What types of waste will be generated;
- How the waste will be managed – will it be reduced, reused or recycled;
- Which contractors will be used to ensure the waste is correctly recycled or disposed of responsibly and legally;
- How the quantity of waste generated by the project will be measured;

In planning a construction project, it is important to understand what excess materialsare likely to be generated and then focus on how the generation of those excessmaterials can either be avoided or the material can be diverted from landfill.One approach is to develop a construction waste management plan. The keyobjectives of any construction waste management plan should be to:

1. Minimize the amount of waste generated as part of the project;

2. Maximize the amount of material which is sent for reuse, recycling or reprocessing;

3. Minimize the amount of material sent to landfill;

When developing and implementing a construction waste management plan the following key elements should be considered:

Pre-Construction

Waste streams: identification which waste streams are likely to be generated and estimate the approximate amounts of material;

Undertake inventory of materials that can be reused, recycled or recovered from theconstruction-site:

• Specific types of materials: a full list of options is provided in **Appendix 2**

• Condition of materials: cleaner material is easier to recycle and may affect the contractor pricefor recycling;

• Possible contamination by hazardous materials like asbestos or lead: these materials will limitreuse/recycling options and require special disposal.

Focus on waste avoidance: instead of managing the waste once it has been generated, it is recommended to look at ways to avoid the generation of that waste in the first place;

There are a number of approaches which can help to minimize the amount of waste generatedby a project, including:

• : choose materials that will be easy to modify in future and demolition works can be undertaken with a minimum of waste;

• Use of modular components: prefabrication of construction components off-site can significantly reduce wastage on-site; providing that the modules have been correctly sized;

• Procurement/purchasing policy: avoid waste by specifying exact requirements and minimizepackaging and ask suppliers to take back packaging and unused materials, such as pallets andspare bricks;

• Appropriate storage and management of materials on-site will minimize damage from weather or machinery, eliminating the need for the purchase of replacement materials and waste generation;

Services: select an appropriately qualified waste management contractor who will provide services for the waste streams generated and data on waste/recycling generation;

On-site: understanding how the waste management system will work on-site, including bin placement and access;

- Determine storage requirements (separate bins or co-mingled), things to consider include:
- Ease of use: ensure that containers are easily accessible by workers;
- Safety: ensure that the containers and storage can be managed safely, including limiting
- public access to the site;
- Aesthetics: ensure that the site appears orderly and will not raise concern from localresidents or businesses – for example screening for dust and litter containment and dailycollection of windblown material;
- Establish a collection/delivery plan in collaboration with waste contractors for waste and recyclable materials generated on-site;

Asbestos

Some old buildings are likely to include asbestos-containing products. This kind of waste should be managed according relevant laws, properly marked, sealed, and disposed.

During Construction

Clearly assigning and communicating responsibilities: ensure that those involved in the construction are aware of their responsibilities in relation to the construction waste management plan;

Engage and educate personnel: tobe clear about how the various elements of the wastemanagement plan will be implemented and ensure personnel have an opportunity to provide feedback on what is/is not working;Whatever waste management system is in place, it is vital that all personnel using it understand how to use the system and who has responsibility for ensuring it is used correctly. Trying new approaches and systems can be difficult as changes to current behavior will be required

Monitoring: to ensure the plan is being implement, monitoring on-siteis suggested;

One aspect of monitoring the implementation of the plan is to ask personnel on-site how the system is working. Other options are to seek feedback from waste management contractors or undertake site inspections to see if the correct material is going into the bin and to understand what waste isbeing generated that was not expected.

Post Construction

Evaluation: Once the project is complete, contractor can evaluate estimates in the plan against the actualdata for waste generated and consider feedback from personnel;

Once the project has been completed it is suggested to evaluate how the plan went. Where the expected amounts of waste generated? How did the bin placement on-site work out? What feedback wasthere from personnel on-site? From this evaluation, issues can be avoided in future developments.

3 Occupational health and safety

This chapter covers the management of safety and health on construction projects. The key to achieving healthy and safe working conditions is to ensure that health and safety issues are planned, organized, controlled, monitored and reviewed. Everyone controlling site work has health and safety responsibilities. Checking that working conditions are healthy and safe before work begins and ensuring that the proposed work is not going to put others at risk requires planning and organization. Planning has to consider changes to the site as it develops – from welfare arrangements at the setup, through to snagging work and the dismantling of site huts and hoardings at the end of the contract. The basic requirements apply to all jobs.

Below is list of documentations (and obligations) every contractor should provide. These are basis to start from: (For more detailed documentation, inAppendix 4 there is a list with relevant laws and procedures)

- Evidence of Work reporting to labor inspection – copy;
- Elaboration of construction site design;
- To create and set a construction site board sign with relevant information;
- Labor contracts for every worker at construction site (list of workers to be hired);
- Evidence of safety and health training for workers - Form number 6 for every employee;
- Report of medical examinations of employees;
- Medical certificates for every worker that will be hired at workplaces with increased risk;
- Proof of professional qualifications of employees for specific workplaces (machine operators, welders...);
- Designated responsible person on construction site, the decision on determining responsible person on construction site (for each subcontractor);
- A proof that every worker is provided with personal protective equipment;
- Risk assessment act (first page and conclusion);
- Proof that every worker is ensured from consequences of an work accident (M form);
- Decision on appointing a Person for Safety and Health at Work;
- Agreement on cooperation with appliance prescribed measures for safety and health at work, signed with subcontractors, which determines the person for coordination in this area, both contractors and subcontractors;
- Reports of testing equipment, which must be preventively and periodically tested (Rulebook on the procedure of inspection and testing of work equipment and testing of working conditions);
- Report that some workers have been properly trained to provide first aid;
- Report on conducted training of employees for fire protection;
- First aid cabinet;
- Fire extinguisher;
- Records from the field of health and safety (form number 1-14);
- Rulebook for safe and healthy work;

General measures for health and safety

These are some general measures to be taken on construction sites. Every contractor must provide much detailed measures, according laws and by-laws (Appendix 4) depending on each project and type of work.

Stability and Strength

a. Materials, equipment and generally any element which can move and by that may affect the safety and health of employees, must be fixed in an appropriate and safe manner.

b. Access to any base ground that is not strong enough is not permitted; except when equipment and devices are provided for safe execution of work.

Energy installations

a) Electrical installations must be designed, installed and used in the way they do not represent a danger that can cause of fire or explosion. Every person on construction site must be protected from dangerous effects of electricity, or from the danger of direct or indirect contact with installations and equipment under voltage.

b) When designing, installing and selecting protective equipment and devices, what must be considered is the type and power of used energy, the external influences and the competence of those who have access to installations.

Traffic areas and escape routes

a) Traffic areas intended for the movement of vehicles and persons and escape routes must always be free in the way to allow the shortest escape to safe area.

b) In the case of danger, constructor must provide safe evacuation for all employees from all jobs at the site.

c) Number and size of traffic areas and escape routes in case of danger are depending on type of equipment used for work, sizes of construction site and working and utility rooms and the largest number of people who can be present at the site.

d) Traffic areas and escape routes in case of danger must be appropriate marked, in accordance with the regulations on safety and health at work. Labels must be stable and placed in appropriate places.

e) Traffic areas and escape routes in case of danger, as well as traffic surfaces and doors that allow access to them must be free of any obstacles.

f) Traffic areas and escape routes in case of danger that they require lighting, must have appropriate intensity security lighting in the case the cessation of general lighting, or the cessation of electrical supply on construction site.

Detection and fire fighting

a) Depending on the characteristics of the construction site, the size and number of facility rooms, equipment, physical and chemical characteristics of the present substances, and the

largest possible number of persons present at site, there must be a sufficient number of devices and installations for extinguishing the fire and, where necessary, for detecting fire.

b) There must be periodic validation and regular servicing and maintenance for devices and installations for detection, reporting and fire extinguishing.
c) Fire extinguishing equipment, which is not installed, must be easily accessible, easy to use and appropriate marked which must be stable and placed in appropriate places.
d) In the case of fire-fighting interventions, technical interventions for rescuing persons and property and other interventions, a suitable and unobstructed approach must be provided for fire-fighting vehicles.
e) It is necessary to provide conditions for the safe evacuation of persons and property in case of fire and other interventions.

Ventilation

a) It is necessary to provide sufficient fresh air, in accordance with working methods and activities and the physical efforts required of the employees.
b) When a forced ventilation system is used, this system must be maintained and employees must not be exposed to increased airflow rate harmful to health. The system for forced air ventilation must be equipped with a fault detector.

Exposure to hazards

a) Employees must not be exposed to levels of physical, chemical, biological or other harmfulness which are harmful to safety and health.
b) If employees have to enter a space with atmosphere is dangerous or not containing enough oxygen or flammable, the atmosphere in that space must be under supervision with the obligatory application of appropriate measures for the prevention of hazards.
c) In no case employees should be at high risk of injury or damage to health in a closed atmosphere, unless it is under constant external supervision and unless all the measures have been taken to ensure he will get adequate help at any time.

Temperature

a) Working methods and activities, as well as the physical burden of the employee, must be determined according to ambient temperature.

Natural and artificial lighting of the workplace, utility rooms and traffic areas

b) Workplaces, rooms and traffic surfacesmust, as far as possible, haveenough natural light, and at night and when natural light is not enough, artificial lighting must be provided. Where needed, constructor should use portable sources of light, protected against mechanical damage. The color of the artificial lighting should not affect the identification of safety signs.
c) Installations for workplaces, rooms and traffic surfaces illumination, must be placed in such a way that does not pose a danger to employees that would appear in dependence of the type of lighting.

d) Workplaces, utility rooms and traffic areas where employees can be exposedto special risks, must be equipped with security lighting of adequate strength, in the case of a loss of artificial lighting.

Doors and gates

a) Sliding doors must be fitted with a safety device that prevents the door from jumping out of the rail and collapsing.
b) Doors and gates that open up must be fitted with a mechanism that prevents their fall.
c) Doors and gates along the traffic surfaces for evacuation must be marked appropriately.
d) In the immediate vicinity of the gates, which are primarily intended for passage of the vehicle, they must also have a special door for the passage of the face, if the passage of the face through these gates is not safe. These doors must be visibly marked and always passable.
e) The doors of the mechanized drive must function so that employees are not exposed to hazards of injuries. These doors must be fitted with a safety lock for the current stop, which must be easily visible and accessible. If, in the event of power failure, the doors do not open automatically, it must be possible to open them manually.

Traffic surfaces - dangerous zones

a) Traffic surfaces including stairways, fixed ladders, places and ramps for loading and unloading must be planned, arranged and designed to provide a simple, safe and appropriate access in a way that employees working nearby will not be exposed to dangers.
b) Traffic roads that are part of the construction site and are used during construction works must not cross civil roads.
c) Dimensions of traffic surfaces for movement of persons and/or transport of goods, including traffic surfaces used for loading and unloading materials must be specified depending on the number of possible users and types of activities being performed. If these are traffic surfaces are used to move the vehicle, sufficient space must be provided for the vehicle safe movement or other adequate protection for other users. Traffic surfaces must be clearly marked, must be regularly checked and properly maintained.
d) Between traffic surfaces for moving vehicles and doors, gates, faces crossing, corridors and stairs, it is necessary to provide sufficient passage width.
e) If there are places on the site where access is restricted - the danger zone, that zone must be equipped with devices that prevent access to unauthorized persons. Appropriate measures should be taken to protect the employees who are authorized to enter in dangerous zones. Dangerous zones must be clearly marked.

Unburdened movement at the workplace

a) Workplace must be arranged in the way employees can work smoothly, including all the equipment or devices used on these surfaces.

Working at height

b) Work must be properly planned, supervised and carried out by competent people with the skills, knowledge and experience to do the job. Contractor must use the right type of equipment for working at height. It is necessary to take a sensible approach when considering precautions. Before working at height, contractor should:

- avoid work at height where it's *reasonably practicable* to do so,
- where work at height cannot be easily avoided, prevent falls using either an existing place of work that is already safe or the right type of equipment,
- minimise the distance and consequences of a fall, by using the right type of equipment where the risk cannot be eliminated,

c) For each step, always should be consider measures that protect everyone at risk (collective protection) before measures that only protect the individual (personal protection).Collective protection is equipment that does not require the person working at height to act for it to be effective. Examples are permanent or temporary guardrails, scissor lifts and tower scaffolds.Personal protection is equipment that requires the individual to act for it to be effective. An example is putting on a safety harness correctly and connecting it, with an energy-absorbing lanyard, to a suitable anchor point.

First Aid

d) The contractor must provide first aid, to enable the appropriate number of workers who will be available to provide first aid if necessary. Transport of workers must be provided in case of injury or sudden illness, in order to provide treatment.

e) Contractor must provide one or more first aid rooms if it is necessary due to the volume and type of work.

f) First-aid rooms must be equipped with the necessary first aid equipment and accessible to manipulate the stretcher. The rooms must be marked appropriately.

g) First-aid equipment must be accessible in every part of construction site, where working conditions require that, and labeled in accordance with regulations. The address and phone number of the nearest emergency department must be visible displayed.

Utility rooms

Wardrobes and cloakroom closets

a) Adequate wardrobes and closets must be provided for workers who use work clothes and uniforms, when for healthy or other reasons it is impossible expect them to changed their clothes in other rooms.

b) Wardrobes must be large enough and, when necessary, must be provided that every worker can dry out wet work clothes and postpone and lock up his own personal clothes and things.

When circumstances require (e.g. dangerous substances, moisture, impurities, etc.), wardrobes must be organized in way which working clothes are kept in a place separate from personal clothing and things.

c) It is necessary to provide separate wardrobes or separate use of the wardrobe for men and women.
d) If it is not necessary to provide wardrobes, contractor must organize adequate place where workers can put away personal clothes and things.

Showers and sinks

a) A sufficient number of suitable showers must be provided for workers, if so requires the nature of the job. It is necessary to provide separate showers or separate use of showers for men and women.
b) The bathrooms with showers must be large enough so every worker can wash without restrictions in terms of conditions or appropriate hygiene standards. Showers must provide warm and cold running water.
c) If it is not necessary to provide showers, contractor must provide site with sufficient number of washbasins with running water (hot water if necessary). It is necessary to provide separate wash basins or separate use of sinks for men and women, if required for privacy reasons.
d) If the rooms with showers or washbasins are separated from the cloakroom and the rooms they must be directly linked.

Toilets

a) Special rooms with adequate number of toilets and wash basin must be provided close to workplaces, work rooms, rooms for rest, dressing rooms and rooms with showers. It is necessary to provide separate toilets or separate use of toilet facilities for men and women.

Rooms for rest and/or accommodation

b) In order to ensure safety and health, and especially related to type of work taking on site, the number of worker or the distance of the construction site from the place of workers residence, site must be provided with affordable rooms for rest and/or accommodation.
c) Rest and/or accommodation rooms must be large enough and equipped with appropriate number of tables and seats with a backbone for a sufficient number of workers.
d) If there are no separate rooms for rest, another room where workers can rest must be provided.
e) In the rooms for rest and/or accommodation, necessary measures must be taken in order to protect non-smokers from the harmful effects of tobacco smoke. If necessary, rooms for rest and/or smokers' accommodation should be separated.

Other

a) The external site boundaries must be marked to be clearly visible and recognizable.
b) Workers on construction site must be provided with sufficient quantities of drinking water and preferably other non-alcoholic drinks both in the utility rooms and on workplace.

Personal Protective Equipment

Personal Apparel

The employer will ensure that the personal wearing apparel of a worker shall be of a type and condition that will not expose the worker to any unnecessary and avoidable hazards.

Head Protection

• Workers must wear approved hard hats when overhead, falling, or side impact hazards exist or when the risk of electrical shock is present.

• Inspect hard hats routinely for dents, cracks, or deterioration.

• If a hard hat has taken a heavy blow or electrical shock, it must be replaced even when there is no visible damage.

• Maintain hard hats in good condition. Do not: drill, clean with strong detergents or solvents, paint, or store them in extreme temperatures.

• The replacement of headgear every five years, and headgear suspension annually, is a recommended safe practice.

Eye and Face Protection

• Workers must wear approved safety glasses, goggles or face shields for welding, cutting, nailing (including pneumatic), or when working with concrete and/or harmful chemicals.

• Eye and face protectors are designed for certain hazards so be sure to select the type to match the hazard.

• Replace poorly fitting or damaged safety glasses.

Hand Protection

• High-quality gloves can prevent injury.

• Gloves should fit snugly.

• Workers should always wear the right gloves for the job (for example, heavy-duty rubber for concrete work, welding gloves for welding).

Foot Protection

Construction workers must wear approved footwear on a construction site. The type of protection provided by the footwear must match the hazards.

For example:

- Toe protection is required to prevent crushing wounds.

- Puncture-resistant soles are required to prevent puncture wounds.
- Electric shock- resistant soles are required to prevent electric shock.
- Ankle support protects from rolling over the ankle while walking on uneven surfaces or rough terrain.

Hearing Conservation

According to the World Health Organization, noise-induced hearing loss is the most common irreversible (and preventable) occupational hazard worldwide. Additionally, noise creates other safety concerns. It interferes with communication, can mask the sound of alarms (e.g., back-up alarms, smoke alarms), and can increase fatigue and decrease mental alertness especially during prolonged exposure. The OHS General Regulations require employers to do the following:

- Determine if workers are exposed to excess levels of noise, as described in the regulations.
- If the employer finds workers are exposed to excessive levels of noise, the employer must:
  - Advise exposed workers of the health risks of the exposure.
  - Exploreoptions to reduce noise levels to safe limits through engineering controls, eliminating the source altogether if possible.
  - Provide annual hearing tests for workers found to be exposed to noise levels that exceed safe limits.
  - Provide hearing protection.
- If the employer has determined workers are exposed to excessive noise levels that cannot be eliminated or reduced to safe limits, the employer must:
  - Post signs to warn workers of the noise risks. • Have a hearing conservation program.
  - Determine and provide the appropriate personal protective equipment (PPE) for workers.
  - Train workers on proper use and care of PPE and appropriately supervise workers to ensure PPE is being properly used.

Housekeeping and Access at Site

- Keep all walkways and stairways clear of trash/debris and other materials, such as tools and supplies, to prevent tripping.
- Keep boxes, scrap lumber and other materials picked up. Put them in a dumpster or trash/debris area to prevent fire and tripping hazards.
- If working on a multi-level worksite, trash and debris shall be lowered to the ground level in suitable containers or chutes
- Objects larger than rubbish or debris shall be lowered by cranes, hoists or other mechanical means.
- Provide enough light for workers to see and to prevent accidents.

Stairways and Ladders

- Install permanent or temporary guardrails on stairs and landings before stairs are constructed between levels to prevent someone from falling or stepping off edges.

- Do not store materials on stairways that are used for general access between levels.
- Keep hazardous projections such as protruding nails, large splinters, etc. out of the stairs, treads or handrails.
- Correct any slippery conditions on stairways, such as applying anti-slip stair nosing.
- Keep ladders in good condition and free of defects.
- Inspect ladders before use for broken rungs or other defects. Discard or repair defective ladders.
- Place ladders at the proper angle (1 ft out from the base for every 4 ft of vertical rise).
- Secure ladders near the top or at the bottom to prevent them from slipping and causing falls.
- Extend ladders at least 3 ft above the landing to provide a handhold or for balance when getting on and off the ladder from other surfaces.
- Do not set up a ladder near passageways or high traffic areas where it could be knocked over.
- Use ladders only for what they were made and not as a work platform, runway, or as scaffold planks.
- Always face the ladder and maintain 3 points of contact when climbing and descending a ladder.

Scaffolds

Scaffolds are common on constructions sites because they give workers safe access to elevated areas. Scaffolds can, however, pose a hazard to workers especially when erected improperly, or when missing key safety measures or workers are not using it correctly. It is important to have a competent persons erecting, inspecting, and dismantling the scaffolds, with knowledge about the provisions of the Occupational Health and Safety Act and the Regulations that apply to the assigned work, and about potential or actual danger to health or safety associated with the assigned work.

- Erect and dismantle scaffolds as per manufacturer's specifications only under the supervision of a competent person.
- Erect scaffolds on firm and level foundations.
- Ensure finished floors are capable of supporting the load for a scaffold or work platform and that they provide a stable base.
- Place scaffold legs on firm footing and secure from movement or tipping, especially surfaces on dirt or similar surfaces.
- Use manufactured base plates, screw jacks and mudsills made of # 1 spruce or equivalent to level or stabilize the footings. Do not use blocks, bricks, or pieces of lumber.
- Ensure a competent persons inspects scaffolds before each use
- Ensure scaffold design specifications are available on site at all times
- Ensure completed scaffolds have all required lateral and horizontal bracing in place.
- Provide safe access to get on and off scaffolds and work platforms.
- Ensure workers work within the framework of the scaffolds. Never step on planks outside of the work area.

- Keep scaffolds and work platforms free of debris. Keep tools and materials as neat as possible to help prevent materials from falling and workers from tripping.

Tools and Equipment

- Maintain all hand tools and equipment in safe condition and check them regularly for defects. Remove broken or damaged tools and equipment from the jobsite.
- Follow the manufacturer's requirements for safe use of all tools. • Use double insulated tools, or ensure the tools are grounded.
- Equip all power saws (circular, skill, table, etc.) with blade guards.
- Make sure guards are in place before using power saws.
- Turn off saws before leaving them unattended.
- Raise or lower tools by their handles, not by their cords.
- Keep wooden handles free of splinters or cracks and be sure the handles stay tight in the tool.
- Workers using powder-actuated tools must receive proper training prior to using the tools.
- Keep equipment in a safe place, according to the manufacturer's instructions.
- Require proper eye protection for workers.

Vehicles and Mobile Equipment

- Ensure workers are trained to stay clear of backing and turning vehicles and equipment with rotating cabs.
- Be sure that all off-road equipment used on site is equipped with rollover protective structures (ROPS).
- Maintain back-up alarms for equipment.
- Be sure that all vehicles have operational braking systems and brake lights.
- Use seat belts when transporting workers in motor and construction vehicles.
- Block up the raised bed when inspecting or repairing dump trucks.
- Know the rated capacity of the crane and use accordingly.
- Ensure the stability of the crane.
- Use a tag line to control materials moved by a crane.
- Verify experience or provide training to crane and heavy equipment operators.

Electrical

- Prohibit work on new and existing energized (hot) electrical circuits until all power is shut off and a positive Lockout/Tag out system is in place.
- Maintain all electrical tools and equipment in safe condition and check regularly for defects.
- Remove broken or damaged tools and equipment from the jobsite.
- Do not bypass any protective system or device designed to protect employees from contact with electrical current.

- Locate and identify overhead electrical power lines. Make sure that ladders, scaffolds, equipment or materials never come within the minimum approach distance electrical power lines as noted in the previous section.

4 Fire Hazard

This chaptere is concerned with the safety of those carrying out construction work and those nearby who may be affected by it. This brief document aims to provide a best practice guide for contractors in preventing fire on projects, whether that be a new build or a refurbishment. This guide is designed to raise awareness of some of the key practical arrangements and working methods that should be in place to mitigate the risk of fire. The goal is to prevent anyone being harmed on- or off-site by construction activities. The guidance does not deal with fire safety requirements for the occupants of completed buildings. However, where construction work takes place in occupied or part-occupied buildings, construction managers and other dutyholders need to take account of the implications for occupier staff.

While the generality of the guidance is applicable to all sites, additional measures may be required where higher risks are involved or where specialized work is undertaken. Further guidance is given in this book but some situations, such as more complex and higher risk projects, are beyond its scope and you may need additional help with these from a competent specialist.

Not all the safeguards in this guidance will be relevant in all circumstances. What is needed depends on the extent and nature of the risks. This is important since it should not be assumed that small-scale construction work is necessarily low risk. For instance, minor welding repairs undertaken in an oil refinery could have catastrophic consequences if they are not properly controlled. In such cases, application of the appropriate safeguards described in this document is vital.

The nature of fire

Fire is sustained by three elements: ignition source, combustible material and oxygen. Construction projects will, at various stages, have all three elements in place. The key is ensuring they are not combined in an uncontrolled manner.

Identify sources of ignition

By looking for possible sources of heat that could get hot enough to ignite material found on your site. These sources could include:

- smokers' material, eg cigarettes, matches and lighters;
- naked flames, eg gas- or liquid-fuelled open-flame equipment;
- those deliberately introduced (arson);
- plant and equipment, eg fuel and vehicle exhausts;
- electrical – faulty or misused electrical equipment;
- poor electrical installations, eg overloads, heating from bunched cables and/or damaged cable;
- hot processes/hot work, eg welding by contractors;

- light fittings and lighting equipment, eg temporary lighting, halogen lamps too close to stored products;
- electrical, gas- or oil-fired heaters (fixed or portable), room heaters in temporary office accommodation or welfare cabins;
- heat sources, such as gas, electric, cooking equipment, microwaves;
- friction-generated heat from mechanical equipment such as disc cutters;
- static charge from mechanical equipment;
- use of oxy-fuel equipment;

Identify sources of combustible material

Anything that burns is fuel for a fire. Many materials which can burn have to be used during construction work. Reducing the quantity of material on site reduces the chances of fire occurring and limits the extent of any fire which should start. Stocks of high fire hazard material should be managed to balance production needs with the need to reduce the risk of fire. Limit the material present at worksites to what is needed for half a day or a single shift and return unused material to the stores when the work is finished. Where combustible or flammable materials have to be used, select the least combustible alternatives.

You need to look for the things that will burn and are in enough quantity to provide fuel for a fire or cause it to spread to another fuel source. Some of the most common fuels found on site include:

- components of the structure itself such as some composite panels and timber;
- stored/in-use building products such as composite panels and timber;
- rubbish;
- flammable liquids such as paints and varnishes;
- protective coverings;
- scaffold sheeting;
- volatile flammable substances such as paints, thinners;
- fuel for portable equipment;
- liquefied petroleum gas (LPG), eg bitumen boilers, temporary site accommodation and similar areas;
- packaging materials;
- petrol disc cutters and other portable equipment;

Identify sources of oxygen

The main source of oxygen for a fire is in the air around us. On construction sites, this will be natural airflow through doors, windows and other openings. Wind or the 'chimney effect' can also cause increased oxygen to feed the fire.

Additional sources of oxygen can sometimes be found in site processes or materials used or stored on site such as oxidizing agents; they can provide a fire with additional oxygen and so help it burn. These chemicals should have identification on their container.

Identify people most at risk

As part of your fire risk assessment, you need to identify those at risk if there is a fire. To do this you need to be aware of where you have people working on site or people who are affected by your site, such as contractors, visiting dutyholders and members of the public in nearby premises etc. It is also important to look at those affected if the site is partially occupied. When parts of a completed refurbishment or new build are handed over to the client on a phased sequence it is important to ensure that all those who may be affected by fire in either the construction site or the occupied premises have been identified.

You must consider all the people who use or could be affected by your site, but you should pay particular attention to people who may be especially at risk such as:

- those who work alone, eg security staff;
- people who are in isolated areas, eg maintenance staff, staff on cranes and reach trucks;
- people who are unfamiliar with the site, eg new sub-contractors or visitors;
- people with language difficulties;
- other people in the vicinity of the premises;
- those occupying adjacent buildings who may be at risk from radiated heat/fire spread.

If a fire does break out, it is most likely that the local fire and rescue service will attend your site. In implementing the findings of your fire risk assessment, and preparing your emergency plan, you should therefore consider the risks that fire fighters would face on your site in the event of a fire or other emergency.

Fires on construction sites can also cause the closure of roads and railways.

Evaluate, remove, reduce and protect from risk

Having identified the hazards in Step 1 and the people at risk in Step 2, you now need to take action to reduce the risks to an acceptable level. You should do this in two ways, by:

- reducing the risk of a fire occurring;
- reducing the risks to people in the event of a fire;

Reducing the risk of a fire occurring

The way the site is managed may affect the precautions you need to put in place. You may not be the only one in control of the site – for example, during refurbishment work part of the site may remain occupied during the work. You may need to work with managing agents or building owners and, in multiple occupancy buildings, all those with some control must co-operate to reduce the risk to an acceptable level.

In general, fires start in one of three ways:

- accidentally, such as when smoking materials are not properly extinguished or when lights are too close to combustibles;

- act or omission, such as when electrical equipment is not properly maintained, or when combustibles are allowed to accumulate near to a heat source, or by storing LPG next to an electric fire or other source of heat;
- deliberately, such as an arson attack involving setting fire to external rubbish skips placed too close to the building.

Look critically at your project and try to identify any accidents waiting to happen and any acts or omissions which might allow a fire to start. You should also look for any situation that may present an opportunity for an arsonist.

You should remove hazards where it is reasonably practicable to do so. If you cannot remove the hazards, you need to take reasonable steps to reduce them to an acceptable level. You should do this early in the planning process, well before the construction work starts. For example, in heavily built-up areas, where the risk to neighbouring properties has been identified as high, changing from a timber frame build method to one involving a lower risk from fire will significantly reduce the overall risk from the project. Designers can also specify that permanent fire protection such as stair enclosures should be constructed as early as possible to improve means of escape for those constructing the building. The early installation of fire mitigation methods such as fire detection and suppression systems will also reduce the risk.

Ensure that any actions you take to remove or reduce fire hazards are not substituted by other hazards. For example, if you replace a flammable substance with a toxic or corrosive one, you must consider whether this might cause harm to people in other ways.

Remove or reduce sources of ignition

There are various ways that you can reduce the risk caused by potential sources of ignition, for example:

- Wherever possible, replace a potential source with a safer alternative, for example, replace naked flame and radiant heaters with fixed convector heaters or other types of heaters with no red element.
- Conduct routine hot works, eg steel cutting, in a designated area away from combustible material and the main structure.
- Operate a safe smoking policy – allow smoking only in designated smoking areas and prohibit smoking elsewhere.
- Restrict the movement of and guard portable heating appliances.
- Separate ignition hazards and combustibles, eg ensure sufficient clear space between lights and combustibles, and consider building fire-resistant enclosures for hot work processes.
- Control, inspect and monitor ignition hazards, eg temporary lighting, halogen lamps, display lighting or lights too close to combustibles.
- Ensure electrical, mechanical and gas equipment is installed, used, maintained and protected in accordance with the manufacturer's instructions, including any equipment located in temporary accommodation.
- Strictly control hot processes/hot work by operating permit-to-work schemes.
- Check all areas where hot work (eg welding) has been carried out at regular intervals for 60 minutes after work has finished to ensure that no ignition has taken place and no smouldering or hot materials remain that may cause a fire.

- Ensure that no one carrying out work on gas fittings, which involves exposing pipes that contain or have contained flammable gas, use any source of ignition such as blow-lamps or hot-air guns.
- Take precautions to avoid arson.
- Turn off equipment when it is not attended or being used.
- Take action to avoid any parts of the site, and in particular storage areas, being vulnerable to arson or vandalism.
- Do not permit bonfires on site.

Remove or reduce combustible material

There are various ways that you can reduce the risks caused by materials and substances that burn, for example:

- Substitute with less flammable materials.
- Plan to reduce storage of combustible materials (egjust-in-time ordering).
- Keep stocks of flammable liquids and gases, in use in open areas, to a minimum.
- Keep flammable liquids and gases which are not in use in dedicated storage areas, externally, where only the appropriate staff are allowed to go, and keep the minimum required for the operation.
- Do not keep flammable solids, liquids and gases together.
- Keep areas containing flammable gases well ventilated, eg LPG cylinders should be kept outdoors in a secure cage.
- Remove or treat materials that are provided to protect finished goods.
- Develop a formal system for the control of combustible waste by ensuring that waste materials and rubbish are not allowed to build up and are carefully stored until properly disposed of, particularly at the end of the day, eg in lockable metal skips.
- Be aware of the changing flammability of materials as they are used.

Remove or reduce sources of oxygen

You can reduce the potential source of oxygen supplied to a fire by:

- in both new build and refurbishments, closing doors, windows and other openings not required for ventilation, particularly out of working hours;
- eliminating or, if not possible, reducing the amount of oxidising materials and not storing oxidising materials near or within any heat source or flammable materials;
- controlling the use and storage of oxygen cylinders, ensuring that they are not leaking, are not used to 'sweeten' the atmosphere, and that where they are located is adequately ventilated;
- in the later stages of the project, considering shutting down ventilation systems that are not essential to the function of the premises.

General fire precautions

In the event of a fire, people must be able to escape from it. The measures which you put in place to allow people to escape are called 'general fire precautions'.

You will need to consider:

- escape routes and fire exits;
- fire-fighting equipment;
- fire detection;
- raising the alarm;
- making emergency plans; and
- limiting the spread of fire (compartmentation).

The general fire precautions needed will vary from site to site and during the construction process. Sometimes they will be very simple and other times much more complicated, depending on the risks involved, but they all need to take account of the nature and size of the site, the number of people present and the nature of the work being done.

Fire prevention

Design phase

Fire prevention starts during the design and planning stage and can be heavily influenced by decisions made by the contractor/design team/homeowner prior to the commencement of construction. Consideration should be given to the mitigation of all potential fire hazards through:

- the use of non-combustible and non-flammable materials
- materials and methods that avoid the need for hot work on-site
- design details that prevent the passage of smoke and flames up through the building
- design of access routes to retain safe evacuation during the construction phase

Fire safety and prevention management

Those responsible for undertaking the construction or refurbishment works also have a responsibility for fire safety and fire prevention throughout the construction phase. Such individuals should be formally appointed, appropriately trained and be competent in their roles.

Fire risk assessment

A project-specific fire risk assessment must be carried out to formally assess and record all potential fire hazards and personnel affected.

Fire safety management plan

The control measures for any residual fire hazards should be recorded in a Fire Safety Management Plan, together with all fire safety and fire prevention arrangements. Fire safety planshould be part of Elaborate of construction site arrangement.

Fire protection

Wherever possible, steps should be taken to limit the spread of fire and smoke. Aspects to consider should include the early installation of permanent fire escape stairs, including compartment walls, fire stopping, fire-protective materials to steelwork, lightning conductors, and also fire doors to stairwells, lift shafts, service ducts and voids.

The basic principles that follow are relevant to fire risk assessment in all circumstances. However, it is important to note that there will be different things to consider for new builds compared to the refurbishment of an existing building. For a new build, assessment will include its location and proximity to other buildings, the type of construction materials and methods. While completed buildings have the standards of fire protection, during construction and before final fire protection is in place the building will be more vulnerable to fire. This vulnerability can often lead to the whole structure being involved in fire with resultant on- and off-site fire spread issues, e.g. the building could be timber framed and more vulnerable to fire before the external finishes are in place. This vulnerability needs to be taken into account early in the design process. In some situations the additional costs entailed in providing adequate controls might make it more cost effective to specify alternative methods or materials from the outset.

Hot work

A major cause of fire on construction projects is hot work. This consists of operations involving the use of open flames, grinding, welding and the local application of heat or the generation of sparks. Hot work should be designed out of a project and replaced with cold work applications wherever possible. Where hot work cannot be avoided, then typical control measures should include; clearing the immediate area of combustible materials prior to undertaking any hot work, provision of two appropriate, dedicated fire extinguishers and a designated person appointed to monitor the area for at least one hour following completion of the hot work. All hot work should be strictly controlled by a hot work permit.

Security against arson

Many fires are started deliberately. Construction work often opens up external walls, doors and windows and, if not secured, can provide easy access for an arsonist. If you do not intend to employ full-time security, or you do not intend to live in your home during the project, then you should make allowance for securing the property when it is unoccupied.
Security can be managed by contractor/builder and provisions should include:

- a solid, timber hoarding around the property with lockable gates and doors
- securing all openings in external walls, basements, doors and windows, with temporary boarding, metal sheeting or bars, at all stages of the project, when the site is unoccupied
- a temporary, internal, motion-sensor intruder alarm system linked to a remote monitoring centre
- scaffold alarm
- lockable steel containers for materials, equipment and tools
- motion-sensor site lighting

Smoking

- Another major cause of fires is smoking on-site. A no smoking policy must be established throughout the site with the exception of designated areas where smoking will be allowed. These areas should be established as far as reasonably practical from any building or structure and be provided with metal ashtrays and a fire extinguisher.
- A 'no smoking' policy must be established. Any designated safe open air locations where smoking is allowed should be of a low fire risk design, away from any combustible or flammable materials and provided with metal ashtrays filled with sand. For very high-risk sites the potential for a fire to start from smoking is significantly increased, therefore the controls and policing should reflect the risk.
- Bring the smoking rules to the attention of all workers and visitors to the site. Display the appropriate signs, particularly in high-risk or communal areas such as canteens and site access points.

Waste materials

Waste material, if allowed to accumulate, can provide a volatile starting point for fire. Good housekeeping is essential to reduce the amount of combustible material stored on-site. All waste packing materials, wood, polythene, timber pallets, oily rags, etc must be removed from the workplace at least once a day.
All construction sites, especially in the latter stages such as fit-out, can generate large amounts of mostly combustible and easily ignitable rubbish. Implementing simple site rules can prevent the accumulation of rubbish.

The following should be considered:

- Set site rules and ensure that they are followed, eg contractors must clear rubbish daily or more often.
- Provide facilities for storage of rubbish, e.g. skips.
- Keep flammable rubbish, such as contaminated rags, in a closed-top, fire-resisting container, e.g. a metal dustbin.
- Situate rubbish skips outside (placing it so if it does catch fire it does not put at risk the site or other properties nearby).
- Store empty bulk fiber bags, sacks and wooden pallets in a safe place until they can be removed from site.

Storage of flammable liquids and gases

Flammable liquids and gases can accelerate the growth and spread of a fire and should be located as far as reasonably practical from buildings and not stored together. Minimal quantities should be retained on-site and ideally removed at the end of each shift. Gas bottles should be stored upright within cages, and flammable liquids in suitable fire rated containers. Acetylene should be avoided if possible due to its unstable, explosive nature when exposed to fire.

Temporary electrics and gas

Faulty electrics can often lead to fires. All temporary electrics should only be installed by a competent electrician. Installations must be inspected regularly. and tested at least every three months. Portable electrical equipment used on-site (kettles, microwaves and computers, for example) should also be inspected. Temporary electrical cabling should be protected against damage and all temporary electrics turned off/isolated outside normal working hours or when the site is unattended; with the exception of those controlling security and automatic fire detection systems. Permanent gas supplies must only be installed by a registered gas installer.

Stored materials

Stored combustible materials can provide fuel for a fire. Where possible, these should be stored outside the building under construction or undergoing refurbishment. When combustible materials need to be stored internally, they should have controlled access and firefighting equipment should be located nearby. In addition, all non-essential combustible wrapping and packaging should be removed at the earliest opportunity and materials protected/covered by a flame retardant covering.

Plant and vehicles

Plant and vehicles generate heat and contain fuel, which can lead to a fire. Stationary plant powered by internal combustion engines (such as compressors and generators) should be positioned in the open air and separated from all buildings. Exhaust pipes should be kept clear of combustible materials. Fuel should not be stored in or near buildings. Fuel tanks must not be filled while engines are hot or are running and should be carried out in designated areas only. All plant and equipment should be protected against any accidental impacts. As a general rule, the long term parking of vehicles should not be permitted within 10m of the building except to allow loading or unloading.

- Plant and equipment should be appropriate for the task and consideration should be given to the area where it is sited (eg it may be acceptable to use a small generator in an open, well-ventilated building constructed of non-combustible materials; however, this would not be appropriate in a basement or enclosed space or an unprotected, framed construction such as timber).
- Consideration should also be given to the storage of plant and equipment in relation to fire risk. Select plant, both electrical and engine driven, to match the demands placed upon it to prevent overheating during use, especially in dusty conditions.
- Recharging arrangements for vehicles or plant should be considered; for example, charging batteries in close proximity to ignition sources can cause fire.

- Temporary lights can easily become an ignition source if broken or abused. Make sure that electrical equipment is not inadvertently covered and that due care is taken in positioning, especially halogen lamps and heaters, to ensure that they cannot ignite any combustible material nearby, or the structure itself.

Temporary buildings and accommodation

Many fires start in temporary buildings and accommodation where there are often heaters (for drying clothes), electrical items, office furniture, documents, etc.

Temporary buildings should be separated from the building under construction/refurbishment and other permanent buildings in order to provide as wide a firebreak as reasonably practicable. Temporary accommodation (i.e. constructed on-site) must be constructed with materials that do not significantly contribute to the growth of fire or the propagation of smoke and/or corrosive fumes.

They must also be fitted with smoke detection equipment. Establishing temporary accommodation in existing structures should be avoided where possible.
If temporary heaters are used within temporary buildings or accommodation, they should be thermostatically controlled with enclosed elements. Coat stands and drying racks must be positioned a safe distance from heaters. Microwaves should be used in preference to gas cookers.

Electrical installations

Electrical installations, especially temporary ones, should be of sufficient capacity for the intended use and designed, installed, inspected and maintained by competent personnel. Do not allow ad hoc additions or alterations to the electrical installation by personnel who are not competent.

Some common electrical faults posing fire risks include:

- use of flat twin and earth cable as extension leads instead of suitable flexible cable;
- overloading of sockets in site accommodation;
- cable laid in or near combustible material, frequently in roof and ceiling voids;
- accumulation of rubbish against distribution boards poses similar fire risks and often occurs when installations are located in quiet parts of the site;
- intentional defeating of safety devices, such as fuses or circuit breakers;
- mechanical damage to cables, often as a result of inappropriate routeing of cables;
- makeshift cable joints made without correct proprietary connectors; and/or use of non heat-resistant glass or broken glass cover over a halogen lamp (poor heat-resisting glass covers have been known to ignite flammable vapours being emitted from a freshly applied solvent-based covering laid on to floors).

The proper use of electrical safety devices, such as residual current devices (RCDs), can reduce the risks of fire arising from electrical faults. However, they do not substitute for properly designed, installed, inspected and maintained electrical installations under the supervision of an electrically competent person.

In order to design and install a system which is safe, with adequate capacity, those responsible need to be informed about its likely use. Electrical systems need to be periodically checked to ensure that they remain safe and free from damage or deterioration. They should also be checked before any addition, extension or modification is carried out. On most sites, and particularly larger ones, this will require some form of systematic electrical inspection and maintenance regime.

Bonfires

The burning of any vegetation or rubbish on site should be avoided unless absolutely necessary, and should only be considered in very limited situations such as site clearance for major road construction.

If, under exceptional circumstances, site burning is permitted, it must be subject to a fire risk assessment and be controlled by a permit system. The following rules mustbe built into the permit system.

Prior approval and necessary permits mustbe obtained from all of the relevant authorities. Never

leave fires unattended until they are completely out, damping down if necessary.
Attendants should have the correct fire extinguishers or other suitable equipment to hand.
Material should be checked for dangerous items, such as empty cylinders, aerosol cans and flammable
substances, before it is brought to the fire.Do not light fires on windy days. Do not site bonfires where flames, smoke and any air-borne debris might affect overhead electrical lines.
Petrol or other similar accelerants should neverbe used to start or fuel any fire. Use paper or similar kindling instead to start bonfires.

Arson and site security

Trespassers on site may deliberately or accidentally start a fire. Arson is a real, substantial problem and risk on all sites, particularly where there are trespassers. Measures should be in place to prevent unauthorised access, especially by children. Care is needed to ensure that no gaps develop in the fencing/hoarding around the site.

Securely store (or if necessary remove) flammable liquids, LPG and other combustible materials while the site is closed.

Some sites may be particularly vulnerable to arson, especially those with a high fire loading or in localities with a known history of vandalism and arson, or where protective hoarding is not possible. In such cases, additional security measures beyond a perimeter fence should be considered, for instance:

- regular out-of-hours security patrols or a permanent security presence;
- security lighting;
- liaison with the local police force; and/or
- closed circuit television monitoring

Security staff need to be alert to the possibility of detecting fire and know what to do if they discover it.Arson is sometimes thought to be committed by site employees, eg unexplained skip fires. Site managers and site security staff should be aware of this potential and the need to be alert for signs of it during their inspections.

Fire safety procedures

Although this guide is primarily about preventing fires, a critical consideration is the safe evacuation of all inhabitants of the building, including construction workers and possibly family members, in the event of a fire.
To this end, robust emergency procedures need to be in place and should include:

- Fire instructions - written emergency procedures, displayed on-site and communicated to all personnel within the building

- Fire alarm – an adequate means of raising the alarm must be in place; typically air horns, push- button 'howlers' or, on larger projects, a linked wired or wireless fire alarm system

- Fire escape signs and lighting - provision of prominent fire escape signs and temporary lighting, where permanent provisions have been impaired
- Escape routes - two escape routes must be available at all times from all areas of the building. Dead-end situations should be avoided or kept to the absolute minimum for the shortest possible time

- Fire drills - the emergency procedures should be checked every three months by carrying out fire drills to evacuate the building to an assembly point. Any shortcomings in the procedures should be addressed
- Fire detection - smoke detection systems should be provided where temporary accommodation (eg; offices, stores, canteens, drying rooms etc) has been established within the building

Firefighting equipment

Equipment should consist of an appropriate type and number of portable fire extinguishers located at the exit points at each level of the building. All fire extinguishers should be stored in high-profile 'Fire Point' cabinets and receive an annual service.

Liaison with the fire and rescue service

On buildings with several storeys or particularly extensive/complex layouts, the local fire and rescue service should be contacted to inform them of the construction works and, ideally, invited to undertake a familiarisation tour. At that time, a site layout plan should be forwarded detailing access arrangements, emergency escape routes and staircases, fire points, temporary buildings and internal temporary accommodation, and the location of hazardous items (such as flammable liquids and gas cylinders). The site plan should be updated as work progresses to reflect the current situation on-site.

Appendices

Appendix 1

List of Laws and regulations relevant for Plans

- Law on Planning and Construction ("Official Gazette of RS" No. 72/2009, 81/2009, 64/2010, 24/2011, 121/2012, 42/2013, 50/2013, 98/2013, 132/2014, 145/2014, 83/2018)
- Law on Environmental Protection ("Official Gazette of RS" No. 135/2004, 36/2009, 72/2009, 43/2011, 14/2016, 76/2018)
- Law on Environmental Impact Assessment ("Official Gazette of RS" No. 135/2004, 36/2009)
- The Law on Waste Management ("Official Gazette of RS" No. 36/2009, 88/2010, 14/2016)
- The Law on Protection against Environmental Noise ("Official Gazette of RS" No. 36/2009, 88/2010)
- The Law on Water ("Official Gazette of RS" No. 30/2010, 93/2012, 101/2016, 95/2018)
- Law on Nature Protection, ("Official Gazette of RS" No. 36/2009, 88/2010, 91/2010, 14/2016)
- Law on Strategic EIA ("Official Gazette of RS" No. 135/2004, 88/2010)
- Law on Air Protection ("Official Gazette of RS", 36/2009, 10/2013)
- Rulebook on handling waste containing asbestos ("Official Gazette of RS" No. 75/2010)
- Regulation ofwaste disposal to landfills ("Official Gazette of the Republic of Serbia", No. 92/2010)
- Rulebook of waste categories with waste catalog (("Official Gazette of the Republic of Serbia", 70/02 и 33/04)

Appendix 2

Waste catalog

17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)

17 01 concrete, bricks, tiles and ceramics
17 01 01 concrete
17 01 02 bricks
17 01 03 tiles and ceramics
17 01 06* mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing dangerous substances
17 01 07 mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 wood, glass and plastic
17 02 01 wood
17 02 02 glass
17 02 03 plastic
17 02 04* glass, plastic and wood containing or contaminated with dangerous substances
17 03 bituminous mixtures, coal tar and tarred products
17 03 01* bituminous mixtures containing coal tar
17 03 02 bituminous mixtures containing other than those mentioned in 17 03 01
17 03 03* coal tar and tarred products
17 04 metals (including their alloys)
17 04 01 copper, bronze, brass
17 04 02 aluminium
17 04 03 lead
17 04 04 zinc
17 04 05 iron and steel
17 04 06 tin
17 04 07 mixed metals
17 04 09* metal waste contaminated with dangerous substances
17 04 10* cables containing oil, coal tar and other dangerous substances
17 04 11 cables other than those mentioned in 17 04 10
17 05 soil (including excavated soil from contaminated sites), stones and dredging spoil
17 05 03* soil and stones containing dangerous substances
17 05 04 soil and stones other than those mentioned in 17 05 03
17 05 05* dredging spoil containing dangerous substances
17 05 06 dredging spoil other than those mentioned 17 05 05
17 05 07* track ballast containing dangerous substances
17 05 08 track ballast other than those mentioned in 17 05 07
17 06 insulation materials and asbestos-containing construction materials
17 06 01* insulation materials containing asbestos
17 06 03* other insulation materials consisting of or containing dangerous substances
17 06 04 insulation materials other than those mentioned in 17 06 01 and 17 06 03
17 06 05* construction materials containing asbestos (18)
17 08 gypsum-based construction material
17 08 01* gypsum-based construction materials contaminated with dangerous substances
17 08 02 gypsum-based construction materials other than those mentioned in 17 08 01
17 09 other construction and demolition waste
17 09 01* construction and demolition wastes containing mercury
17 09 02* construction and demolition wastes containing pcb (for example pcb-containing sealants, pcb-containing resin-based floorings, pcb-containing sealed glazing units, pcb-containing capacitors)
17 09 03* other construction and demolition wastes (including mixed wastes) containing dangerous

substances
17 09 04 mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Appendix 3

Checklist for monitoring Plans

Inspection Items	yes	no	Not relevant for site	Remarks
Air Pollution Control				
Are the construction sites watered to minimize dust generated?				
Are stockpiles of dusty materials covered or watered?				
Cement debagging process undertaken in sheltered areas?				
Are all vehicles carrying dusty loads covered/watered over prior to leaving the site?				
Are demolition work areas watered? (e.g. trimming activities by using breaker)				
Are dusty roads paved and/or sprayed with water?				
Are dust controlled during percussive drilling or rock breaking?				
Are speed control measures applied? (e.g. speed limit sign)				
Others (please specify)				
Water Pollution Control				
Are there a wastewater problem at the site?				
Are there on the site sanitary facilities that provide safe access, use and maintenance, and measures to prevent environmental pollution?				
Are u-channels and manholes free of silt and sediment?				
Are all manholes on-site covered and sealed?				
Are vehicles and plants cleaned before leaving the site?				
Are wheel washing facilities well maintained to prevent overflow, flooding sediment?				
Is the public road/area around the site entrance and site hoarding kept clean and free of muddy water?				
Is domestic water directed to septic tanks or chemical toilets?				
Is water pipe leakage and wastage prevented?				
Others (please specify)				

Noise Control				
Do air compressors and generators operate with doors closed?				
Is idle plant/equipment turned off or throttled down?				
Do air compressors and hand-held breakers have valid noise emission labels (NEL)?				
Any noise mitigation measures adopted (e.g. use noise barrier / enclosure)?				
Are silenced equipments utilized?				
Are diesel-powered plants and equipments shut off while not in use to reduce excessive use?				
Others (please specify)				
Waste Management				
Is the site kept clean and tidy? (e.g. litter free, good housekeeping)				
Are materials stored in good condition to prevent deterioration and wastage (e.g. covered, separated)?				
Are separate chutes used for inert and non-inert wastes?				
Are separated labelled containers/ areas provided for facilitating recycling and waste segregation?				
Are construction wastes/recyclable wastes and general refuse removed off site regularly?				
Are construction wastes collected and disposed of properly by licensed collectors?				
Are chemical wastes, if any, collected and disposed of properly by licensed collectors?				
Are chemical wastes properly stored and labelled?				
Are oil drums and plants/equipments provided with drip trays?				
Are drip trays free of oil and water?				
Is there any oil spillage? Clean-up the contaminated soil immediately?				
Are asbestos wastes handled by registered professionals?				
Others (please specify)				
Storage of Chemicals and Dangerous Goods				

Are chemicals stored and labelled properly?				
Are proper measures taken to control oil spillage during maintenance or to control other chemicals spillage? (e.g. provide drip trays)				
Are spill kits/sand/saw dust used for absorbing chemical spillage readily accessible?				
Others (please specify)				
Protection of Flora, Fauna and Historical Heritage				
Are disturbance to terrestrial flora minimized (e.g. plants to be preserved)?				
Are disturbance to terrestrial fauna minimized (if rare species identified)?				
Any historical heritage exists on site?If yes, ensure appropriate measures taken to preserve it?				
Others (please specify)				
Emergency Preparedness and Response				
Are fire extinguishers/fighting facilities properly maintained and not expired? Escape not blocked/ obstructed?				
Are accidents and incidents reported and reviewed, and corrective & preventive actions identified and recorded?				
Others (please specify)				

Appendix 4

List of Laws and regulations relevant forOccupational Health and Safety an Fire Hazards

- Rulebook on the manner and procedure of risk assessment in the workplace and in the work environment (Official gazette of the republic of Serbia 72/2006, 84/2006, 30/2010, 102/2015);
- Regulation on safety and health at work on temporary or movable construction sites (Official gazette of the republic of Serbia14/2009, 95/2010);
- Law on safety and health at work (Official gazette of the republic of Serbia101/2005, 91/2015 and 113/2017 - other law);
- Rulebook on protection at work in the execution of construction works (Official gazette of the republic of Serbia53/97);
- Rulebook on the procedure of reviews and checked equipment for work and testing the conditions of the working environment (Official gazette of the republic of Serbia. 94/2006, 108/2006, 114/2014, 102/2015);
- Rulebook of preventive measures for safety and health work for using working equipment (Official gazette of the republic of Serbia23/2009, 123/2012, 102/2015, 101/2018);
- Rulebook of preventive measures for safety and health work in use of equipment for personal protection at work (Official gazette of the republic of Serbia, no. 92/2008 and 101/2018);
- Rulebook on personal protection equipment (Official gazette of the republic of Serbia no. 100/2011);
- Rulebook on previous and periodic medicinal reviews of employees in working places with increased risk (Official gazette of the republic of Serbia, no. 120/2007, 93/2008 and 53/2017)
- Regulation on safety and health care records (Official gazette of the republic of Serbia, no. 62/2007 and 102/2015)
- Rulebook of content and the manner of approval of a report on work injury and professional diseases (Official gazette of the republic of Serbia 72/2006, 84/2006, 4/2016 and 106/2018)
- Rulebook of preventive safety and health measures for workplaces with noise exposure (Official gazette of the republic of Serbia, no. 96/2011 and 78/2015)
- Rulebook of preventive safety and health measures for workplaces with vibration exposure (Official gazette of the republic of Serbia no. 93/2011)
- Rulebook of safety and health preventive measures for working with handicraft transfer (Official gazette of the republic of Serbia no. 106/2009)
- Rulebook on preventive measures for safe and healthy work with asbestos materials (Official gazette of the republic of Serbia, no. 106/2009 of 17.12.2009. 6/2010 and 15/2010)
- Rulebook on content of elaborate of construction site arrangement (Official gazette of the republic of Serbia, no. 121/2012 and 102/2015)
- Rulebook on work protection in construction industry (Official gazette of the republic of Serbia, no. 53/97)
- Regulation on safety and health at work on temporary or movable construction sites (Official gazette of the republic of Serbia, no. 14/2009 and 95/2010)
- Lawon fire protection(Official Gazette of the Republic of Serbia, No. 111/2009, 20/2015, 87/2018 and 87/2018 - other laws)