THE WORKING ENVIRONMENT AT THE CONSTRUCTION SITE

Working Environment Act requirements for individual companies do not just include conditions at the parent company. The Danish Working Environment Service will also check the working environment and cooperation at the construction sites. Find out here what this involves.

SHP — SAFETY AND HEALTH PLAN

The Safety and Health Plan, or SHP, is a description of how the construction site is to be established and fitted out and how work is to take place on site. The purpose of this plan is to ensure that everyone enjoys a good working environment – but at the same time it is a handy steering tool for the construction management team.

The developer has to prepare a written SHP if there is more than one employer on the construction site and if more than 10 people are working at the same time.

It is also a good idea to create an SHP if the site has to be registered with the Danish Working Environment Service on account of its size alone. Much of the information in the SHP should also be included in the tender documentation.

Contents of the plan
There are detailed rules on how an SHP is to be prepared and what it should include. An SHP should include an organisation plan, a construction site drawing, a description of locations on the site where work will be done by several employers, and a description of the safety measures to be established. The plan also has to state who is responsible for checking compliance with the plan and that the plan is updated regularly over the construction period.

Special rules for other construction sites

- Small construction sites: There is no requirement for a written SHP on construction sites with several employers but no more than 10 people working. Instead, the individual employers have to agree amongst themselves how to perform work safely and correctly at the construction site.
Hazardous work: If hazardous work is carried out on a construction site, the employer must prepare a written assessment of the working environment, irrespective of the size of the work site. Hazardous work includes, for example, excavation to depths in excess of 5 metres, working with contaminated earth, and blasting work.

Only one employer: There is no requirement for a written SHP on large construction sites with only one employer. Irrespective of whether an SHP is to be prepared, the developer must always report the construction site to the Danish Working Environment Service before work commences if:

1. The duration of the work is expected to exceed 30 working days, and at least 20 employees will be working at the same time, or
2. The anticipated amount of work exceeds 500 man-days.

Startup phase
In the case of large jobs, it is a good idea to hold startup meetings with contractors and craftsmen who are to be involved in the construction process. At these startup meetings, there will be reviews of the project documentation, SHP and other relevant information, such as:

- access and transport routes
- storage of materials
- welfare facilities
- dealing with any specific risks

TASKS AND RESPONSIBILITIES

Developer
The responsibilities of the developer cannot be transferred to anyone else. Practical work on executing the developer’s undertakings may – either completely or partly – be done within the developer’s own organisation or by the developer’s appointed advisors, companies or individuals. Even if the developer chooses to engage others to do this work, however, responsibility still rests with the developer to ensure that delimitation and coordination in shared areas, written planning and reporting of the construction site take place in accordance with the rules stipulated in the executive orders.

Delimitation in shared areas
Before work commences, the developer has to enter into agreements with individual employers regarding who is to establish, maintain and remove safety measures in the shared areas. The safety measures should be delimited as early as the time of the tender documentation so that any charges for shared safety measures can be included in the tenders. The developer’s agreements on delimitation should include precise specifications of the scope of the work and the time over which the obligation for safety measures rests with the individual employers. These agreements should also describe how the safety measures can be passed on to a subcontractor. During implementation, if any situations occur which could not have been predicted, changes to delimitation should be agreed at safety meetings.
Coordination in shared areas
The developer has to appoint a coordinator to deal with coordination of safety work during implementation. The individual employers' safety measures must be coordinated by holding safety meetings and by means of personal contact on the construction site.

Assistance with provision of sound working conditions
The developer must otherwise assist to ensure that the employer is able to carry out building and construction work properly in terms of health and safety.

Planner/advisor
For all building and construction projects, the planner must ensure:

- That the project can be implemented and later maintained, while at the same time ensuring compliance with applicable health and safety regulations at the time of planning.
- That the least hazardous substances and materials can be used during both construction and later maintenance.
- That the project (tender documentation) includes the necessary information to make it possible to use appropriate work tools for manual handling of loads.
- That the developer is notified of his obligations in accordance with the Working Environment Act in relation to the anticipated nature and scope of the project.

The planner must also describe:

- How the individual work elements or work phases are arranged most appropriately in relation to one another so that work can be carried out properly in terms of health and safety.
- Specific risks in the project itself and in the physical surrounding area.
- Specific risks resulting from existing conditions on the site/in the building, such as ground installation, buried high-voltage lines and gas pipes, toxic waste dumps, contaminated earth, asbestos in existing buildings, etc.
  If there are any specific risks, the project must describe what specific measures – e.g. specific work tools, personal protective equipment, welfare arrangements, etc. – the planner intends to implement.
- Finally, the planner must describe any conditions of significance to the future working environment relating to the maintenance and repair of the building or facility.
Supplier
The supplier or importer of construction materials must always prepare a supplier user guide which describes:

- The weight of and hooking points for the construction materials when these are being lifted from their mode of transport to the delivery site
- Specific fittings, particularly tools, specific attachment methods and specific transport methods, where required.

Likewise, suppliers or importers must prepare and provide a Danish supplier user guide together with machinery, work tools and chemicals.

FITTING OUT THE CONSTRUCTION SITE

The construction site must be properly planned and equipped so that work can take place safely. This means, among other things, that there has to be plenty of space and good access, and the site has to be clean and tidy.

Plan for fitting and access routes
On entry to the site, there must be a summary plan which shows access routes, storage sites, sheds and areas where helmets must be worn, one-way routes, etc. There must be safe access routes and escape routes, and the site must be kept clean and tidy. Materials must be stored correctly and properly, and waste must be removed immediately.

Sheds, changing areas and toilets
Employees on the construction site must always have access to toilets, appropriate eating areas and handwashing facilities. If the employees are working for more than three days on site, sheds or lightweight vehicles must be set up. The requirements for sheds and welfare arrangements are dependent upon – among other things – how messy the work is and how long the construction period will be.

Winter arrangements
There are special requirements for conditions on the construction site in winter. There must be snow clearing equipment on site, and employees must be protected against bad weather by means of roofed areas or partitions, for example, on carcasses and scaffolding. Any long periods spent working at a trestle or thread cutting machine, for example, should take place in a shed or tent.

Working at height
A large number of tasks and functions on the construction site make particular demands on the prevention of falls. In the ‘Manual for the safety team – building and construction’, BAR Bygge & Anlæg has described the situations that should be taken into account when working at height.
**Working on roofs**

When working on flat roofs with a slope of less than 15 degrees and where the edge of the roof is more than 3.5 metres above ground level, railings must normally be set up around the edge of the roof. When working on sloping roofs, there must be a screen which can safely arrest the fall of a person sliding down the roof.

**Railings and covering**

If work decks, scaffold floors, walkways, etc. are more than 2 metres above ground, railings or some other kind of barrier must be put up. If the ground is particularly hazardous, railings must be put up at heights of less than 2 metres as well. Open facades and holes in floors must always be covered.

**HAZARDOUS WORK**

**Crawling spaces, attic spaces and wells**

Work in crawling spaces, attic spaces, roof spaces, etc. often takes place in poor work positions, and workers can be exposed to dust, poor air and a risk of claustrophobia. Therefore, workers must not work for too long a period, and they must have access to ventilation or respiratory protection. There must always be a watchman when working in wells, and a helmet and lifeline must be worn. Only people who have received special instruction are allowed to work in drainage pipes.

**Fire in the case of electricity and welding**

‘Hot work’ such as welding, soldering and drying runs the risk of fire if you use tools incorrectly or if you fail to screen off inflammable materials. Before starting ‘hot work’, you have to complete an agreement form; this can be downloaded from www.brandteknisk-institut.dk.

**Welding and cutting**

Welding, soldering and cutting smoke contains harmful gases and heavy metals which have to be removed by means of an extractor unit. Always wear a welding helmet, gloves or welding goggles with the right filter glass. Protect oxygen and gas canisters from knocks, blows and heat.

**Electricity and lighting**

Electrical installations on the construction site must meet all the requirements of the Danish Rules and Regulations for Low and High Tension Installations. Cables and extension cables must be protected against being driven over. Lighting on the construction site must be good enough to allow work to progress safely and properly. In the case of excavation work, you have to make sure you do not damage buried cables. When working close to overhead lines, you must remain at a safe distance away from them.
Excavation work
Excavation work should always be managed and monitored by an experienced person. This work should be planned thoroughly so that you know in advance, for example, whether there are any cables or pipes below the surface, whether stiffeners or an excavation box need to be used, and how access routes are to be designed.

Gas pipes and water
Everyone working with gas pipes must have received thorough instruction on safety rules and first aid in the event of accidents involving gas. The concentration of gas in the air must be monitored constantly. Site work at harbours, dikes and waterways requires special safety arrangements. When working at sea, bad weather has to be taken into account and everyone must wear lifejackets.

Working on roads
The work area must be cordoned off from traffic completely if possible. Make sure that the markers are clear and as shown in the marker plan. Always wear hi-viz workwear and safety footwear.

Personal protective equipment
Use the correct protective equipment. Always take care to use the right safety measures and protective equipment. This is especially important when performing hazardous or risky tasks.

If a job requires very extensive use of protective equipment, you should consider whether the entire job can be done in a different way which is less stressful.

Personal protective equipment such as ear defenders, masks, etc. are emergency solutions. As far as possible, work must be arranged such that the use of protective equipment is not necessary. For instance, you should use body harnesses (safety belts on a line) if no scaffolding can be built. There are rules for the individual types of protective equipment which state how they are to be designed, how they must be used, how long they can be used for, etc. It is the employer’s duty to make sure that the necessary safety equipment is available. All protective equipment must bear the CE label.

Safe work procedures

- Make sure that work on the construction site is carefully planned and arranged, and that everyone has received detailed instruction. This will reduce the risk of accidents and injuries at work.

- There must be instructions for use on all machinery, tools and work tools – and staff must comply with these instructions.

- Keep the construction site clean and tidy so that you can access machinery and equipment and to make sure nobody falls over materials or waste.
SAFETY ORGANISATION

It is a general rule that companies employing ten or more people have to set up a safety organisation which, as a minimum, consists of a safety team. In the case of building and construction work, this includes everyone except for the following groups of people:

- Business managers and supervisors
- Temporary workers who have been taken on just to do a specific piece of work on a work site away from the company’s place of business.

Safety committee requirement
Companies employing 20 or more people must set up a safety committee which is to plan and coordinate health and safety work.

Safety teams at building and construction sites
If five or more people are employed at the same work site away from the company’s main site, a safety team has to be set up at the work site. However, this is applicable only if the work is to continue for at least 14 days.

Safety committees at building and construction sites
If 20 or more people are employed at the same work site away from the company’s main site, a safety committee has to be set up at the work site. However, this is applicable only if the work is to continue for at least 14 days.

Safety meetings
In the case of building and construction work where two or more employers are simultaneously employing more than ten people, the developer must coordinate safety work between the individual employers. This is done at construction meetings in which the developer/coordinator, employers and work site safety teams take part. Ordinary safety meetings must be held at least every 14 days.

Safety council
At large building and construction sites with more than 100 employees, the general safety meetings can be replaced by a safety council in which only the developer/coordinator and two representatives of the work site safety representatives and two representatives of the work site management representatives take part. However, permission is required from the Danish Working Environment Service to replace the general safety meetings with a safety council.

If you would like to make sure you have all details covered, please see the Safety team manual – building and construction – section on the safety organisation.
RULES:
The working environment at construction sites is stipulated in the Working Environment Act. Here are the most important executive orders and guidelines from the Danish Working Environment Service and the Danish Labour and Employment Ministry, all of which can be found at www.at.dk

EXECUTIVE ORDERS
Conditions at Alternating Places of Work – 290 – 5 May 1993
Obligations of Planners and Advisors, etc. in accordance with the Working Environment Act – 574 – 21 June 2001
Lifting Gear and Clearance – 1101 – 14 December 1992
Manual handling – 1164 – 16 December 1992
Use of Personal Protective Equipment – 746 – 28 August 1992
Asbestos – 1502 – 21 December 2004
Protection against Exposure to Vibration in Connection with Work – 682 – 30 June 2005
Conditions of Site Huts and Similar – 775 – 17 September 1992

GUIDELINES, ETC. FROM THE DANISH WORKING ENVIRONMENT SERVICE
Conditions at places of work – guideline – A.0.2
Responsibilities and obligations of the developer – guideline – F.1.2
Working environment training for coordinators of health and safety work at building and construction sites – guideline – F.2.3
Health and safety work at temporary and alternating places of work, including building and construction work – guideline – F.2.7
Prevention of accident risks by means of order and tidiness – guideline – F.0.6
Lifting of persons using a fork lift truck with a removable work basket – guideline – B.2.3.1
Requirements for and use of mobile ladders – guideline – B.3.1.1
Use of hoisting, lifting and transporting equipment – report – 2.02.11
Hooking – instruction – 2.3.0.4
Use of single-column and multi-column person lifters located on site – report – 2.04.4
Risk of falling objects at building and construction sites, etc. – guideline – A.2.1
Measurement and lighting on access routes, transport routes and traffic areas on construction sites – guideline – A.2.2
Excavation work – guideline – D.2.13
Welfare arrangements at alternating places of work – report – 1.03.1

Branchearbejdsmiljørådet for Bygge & Anlæg has issued a series of industry guidelines, all of which can be downloaded from www.bar-ba.dk