



01 Policy, organization, and engagement of the management

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Health & safety organization

1.1.4 Responsibility of the top management

The organizational and supervisory duties of all managers are of decisive significance for health and safety.

The management has a legal obligation to adhere to and follow health & safety goals.

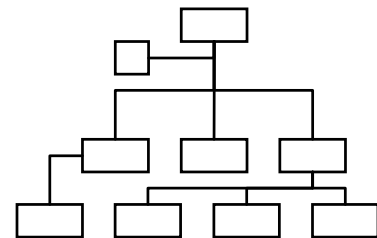
1.1.5 Transferring the contractor obligations

Since these obligations are too numerous and varied, the management cannot perform them all by itself. Therefore, the Management Board transfers the obligations incumbent upon it as the contractor with respect to health & safety, fire, and environmental protection in writing, with the signature of the appropriate supervisor, to the managers of Uhde Services GmbH.

1.1.6 Organization

For the performance of the duties and the resulting tasks for operational health & safety, health protection, and fire protection, the following positions exist at Uhde Services GmbH, which are occupied by appropriately-trained people:

- Management Board
- Managers
- Works Council
- Occupational Health and Safety Specialist
- Internal fire protection coordinator
- Company physician
- Safety coordinator
- If necessary, additional positions



As well as all other employees in the course of their activities.

1.1.7 Tasks and responsibility

Managers

The managers are, among other things, responsible for the duties transferred to them in writing by the Management Board with respect to health & safety and accident prevention. They are responsible for all needs that arise due to occupational safety, health protection, accident prevention, fire and explosion protection. The managers are responsible, depending on the scope of the tasks transferred to them, especially for:



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- Procuring and maintaining equipment
- Making arrangements and taking other measures
- Initiating medical examinations of employees
- Making personal protective equipment available. They are also responsible for the selection of the employees made available to them and the employees' regular instruction/training
- Tools must be made available that are suitable for the conditions in the workplace
- Working conditions must be assessed continuously and occupational measures checked with respect to their effectiveness

Occupational Health and Safety Specialist (safety engineer)

According to § 5 of the German health & safety regulation (ASiG), the employer must commission occupational health and safety specialists in writing.

The tasks of the occupational health and safety specialist include:

- Supporting and advising the Management Board on all questions of occupational safety including the ergonomic design of work.

However, there are no duties incumbent upon the occupational health and safety specialist that arise from the delegation of entrepreneurial responsibility. For the application of their professional knowledge, they are not bound by directives. To receive high-quality advising, they must regularly complete additional professional training.

Internal fire protection coordinator

For industrial operations where an average of 175 people present are subject to a medium-grade fire hazard, a fire protection coordinator must be named (Table 1, vfdb guideline 12/09-01). At Uhde Services GmbH, the number of people present is generally fewer than 100 (status as of fiscal year 2007-2008). Thus no fire protection coordinator must be named.



Uhde Services GmbH has nevertheless installed the function of an internal coordinator in order to accommodate concerns about preventative fire protection. The essential tasks of the internal coordinator are:

- Advising of the Management Board about fire prevention and protection,
- Regular inspection of all operational areas to determine fire hazards,
- Communication of defects in fire protection,
- Information and motivation of employees about the topic of fire protection and behavior in case of danger



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The internal coordinator has an exclusively advising and communicative function between the Management Board and external fire protection experts. If necessary, these perform the following tasks:

- Investigation of fire causes and formulation of fire prevention suggestions,
- Training of employees about the topic of fire protection and behavior in case of danger
- Training of the fire response personnel

Employees

Concrete tasks of the employees are regulated in the context of process organization for the respective processes, for example through operational, work or procedural instructions.

Generally it applies that the employees are obligated to take care of their safety and health to the best of their abilities as well as according to their training and instruction. The employees must also take care of the safety and health of people who are affected by their actions and failures at work. In particular, the employees must use machines, devices, tools, materials, and means of transport, as well as the safety equipment and personal protective equipment made available to them properly and check to make sure that its condition is proper.

If an employee determines that any equipment is not in perfect safety-technical order, he must eliminate the defect immediately. If this elimination of defects is not part of his tasks or if he does not have the required professional knowledge, then he must report the defect to his supervisor immediately.

Works Council

The tasks of the Works Council are specified in connection with accident prevention in the Works Council Constitution Act. The Works Council must work towards the execution of the regulations concerning health and safety and accident prevention in the operation, however, no duties are incumbent upon it that arise from the delegation of entrepreneurial responsibility.



Company physician

According to § 2 of the German health & safety regulation (ASiG), the employer must commission a company physician in writing. The tasks of the company physician are specified in §3 ASiG.





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The company physicians must assist and advise the employer about safety and health and accident prevention in all questions of health protection, however there are no duties incumbent upon them that arise from the delegation of entrepreneurial responsibility. For the application of their knowledge of occupational medicine, they are not bound by directives.

At Uhde Services GmbH, the “Berufsgenossenschaftlicher Arbeitsmedizinischer Dienst e.V.” assumes the occupational medical duties. A contract for these services was signed in 1988; it is still in force today.

Safety inspector/officer

§22 SGB VII^{*)} forms the legal basis for the naming of safety coordinators. The safety coordinators have – with respect to their immediate supervisors – an advisory and supporting function in their operational areas/work areas.

They should keep their colleagues informed about safety-conscious behavior and provide a model for this behavior. They should constantly convince themselves that protective equipment and personal protective equipment is present and is being used. If the safety coordinators detect defects or sources of danger, they must inform their supervisors of this and, if possible, make recommendations for eliminating the defects.

The safety coordinator is not authorized to give instructions to his colleagues. They fulfill an operational honorary post. They bear no responsibility for the execution of health and safety protection and thus also no legal responsibility and liability. ^{*)}German social legislation, Book 7

Environmental protection

To protect natural resources, Uhde Services GmbH engages, in connection with the SCC health & safety management system introduced, in environmental protection.



Furthermore, there is, with the corporate department “Health, Safety & Environmental Protection” of ThyssenKrupp Technologies, an expert office available that should be used explicitly for advising about environmental concerns.



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Health promotion

The promotion of employees' health is a special interest of the Management Board. The goal of health promotion is to achieve through health promotion programs and health groups that:



- Working conditions should be further improved taking into account inspirations from and the experience of employees immediately affected
- The employees develop strategies for the handling of potentially health-endangering operational situations, and
- The health awareness of employees should be promoted

Internal cooperation

The bearers of the abovementioned functions must work together with all people and offices in the company to perform their tasks and ensure mutual information.

According to §9 ASiG, the company physicians and the occupational safety and health specialists must work together with the Works Council to perform their tasks. The company physicians and the occupational safety and health specialists must inform the Works Council about important concerns regarding health and safety and accident prevention and communicate to it the content of suggestions made to the employer. They must advise the Works Council at its request with respect to concerns regarding safety and health and accident prevention.

Cooperation with external offices

All contact with external offices – with respect to safety, health, fire, and the environment – must be coordinated and documented by the QA-HSE department.

1.1.8 Planning

Plants, operating materials, work procedures

The Management Board, the project/order manager, and the managers involve the occupational safety and health specialist in all planning of plants, the procurement and construction of operating materials, and the organization of work procedures, insofar as occupational safety measures are required. A measure is health and safety relevant in every case if:

- There could be crushing, cutting, perforation or other mechanical, thermal or electric hazards
- Hazardous substances are used



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- For materials with which hazardous substances could arise as intermediate or end products
- If technical gases are used
- If oils, lubricants or coolants are used
- If impermissible climatic, physical or psychic burdens or hazards could arise
- If an impermissible noise or vibration arises
- If dangers of explosion or fire cannot be excluded
- If radiation arises (laser, x-rays, high-frequency devices, etc.) or
- If other dangerous arise for employees

Construction work

For construction work, the provisions and standards under public law apply for safety and health and safety on construction sites. The professional association regulation C22, Construction Work, is generally to be considered in practice.



Insofar as our company acts as construction manager, the Management Board or somebody commissioned by it must especially take the following points into consideration:

- For construction sites with special hazards, a coordinator must be named who plans and coordinates the cooperation of all employers on the construction site.
- The creation, change or cancellation of larger construction projects must if necessary be announced in accordance with the local provisions and standards before the start of construction.
- It may be necessary to create a health & safety plan specifying the necessary health and safety measures even during the stage of pre-planning of a construction project.

Maintenance work

If during the planning of maintenance work it emerges that a mutual danger to people or work groups is possible, a coordinator must be named by the office in charge. This can be the project manager or the responsible manager.

The coordinator can also be assisted in advisory fashion by the occupational health and safety specialist on questions of health and safety.



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1.1.9 Procurement

Plants and tools

For construction projects and the procurement of plants and tools, it is necessary that the person placing the order incorporate the occupational health and safety specialist into the measures in timely fashion insofar as this is required from the point of view of health and safety.

In our delivery conditions, contractors have a binding obligation to create or deliver the delivery object so that provisions and standards of public law are adhered to.

This obligation for delivery generally includes that:

- The delivery and contractual object is provided with appropriate markings, which refer to adherence to provisions and standards under public law (e.g. declaration of conformity)
- For particular machines, the certification of an approved inspection and certification office is presented
- Operating instructions are included
- All documents are handed over in the language of the country of usage

Before start-up of plants and tools, these must be inspected, jointly by the responsible managers and the occupational health and safety and environmental protection specialists, for adherence to health and safety as well as environmental protection-relevant specifications. The result of the inspection must be documented with signature on an acceptance protocol.

The operation of a plant or tool without acceptance is not permitted.

Materials and hazardous substances

Before ordering materials^{*)} (pure substances or preparations), the requesting office or procurement must procure a material safety data sheet from the manufacturer/supplier and involve the occupational safety and health specialist.^{*)} TKT guideline AS 05 must be followed



Every manufacturer/supplier is obligated to provide free of charge a current material safety data sheet in the user's local language. In case of product modification, a free update with specification of the changes must be made to the material safety data sheet.

If the substance in question is a hazardous substance and if the use of a replacement substance or replacement procedure is not possible, the necessary protective measures will be specified in cooperation between the operation and occupational safety and health specialist and a material and workplace-related work instruction will be created.

The same procedure also applies for work processes in which hazardous substances are released, e.g. when grinding, welding...



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Using this material safety data sheet and the work instructions, the affected employees will be instructed by the supervisor.

Personal protective equipment (PPE)

The required protective equipment is procured centrally by purchasing and generally kept in the warehouse. Special PPE will be requested by the appropriate supervisor for purchase. A component of the ordering of the purchase is the binding obligation of the supplier to deliver the PPE according to provisions and standards of public law about the bringing into trade of PPE.



For the users, this is evident from the marking provided and the included certificates or certifications (e.g. CE marks and declaration of conformity).

The PPE that should be used in each operational area will be checked in cooperation between the various offices for health and safety for suitability and approval and approved for use. This also applies for new and special PPE that is not kept by default.

Non-approved or unmarked PPE may not be used.

Contracting companies

The procurement of contracting companies that should be active in employee sourcing or according to a Works Council contract for Uhde Services GmbH will be initiated at the request of the professional departments to the Materials Management division.

Employees who are sourced to us according to AÜG^{*)} will be treated like our own employees. They will receive training from our managers, thus Uhde Services GmbH assumes responsibility with respect to health and safety and there is a duty to train for our managers and the obligation for Uhde Services GmbH to make available the required PPE. ^{*)} German law on labor leasing

Companies that are commissioned according to plant contract are responsible themselves for the contractually-defined order. Therefore there is no right to train for employees of Uhde Services GmbH with respect to the plant contract partners. The responsibility for the execution of and adherence to health and safety in these cases lies exclusively with the plant contract partners. In order to guarantee health and safety here, the order managers of Uhde Services GmbH function simultaneously as coordinators for safe cooperation. For orders of larger scope, a coordinator can be named/commissioned. There may be no distinction in the safety standard between our own and contracting companies. The coordinator is therefore entitled, to fulfill his duties, to give the responsible people at the contracting company instructions.



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1.1.10 Routes, locations, buildings

Internal transportation routes and locations form a focal point for accident occurrence. Injuries occur, for example, due to stumbling, slipping, and falling. With a safe design, many accidents can be avoided.



Therefore, the requirements for safe transportation routes must be taken into account even during the planning of new facilities and equipment. Older plants should be adapted with reasonable effort to the state of technology. According to the type of use, there is a distinction between transportation routes with pedestrian, vehicle, and combined pedestrian and vehicle traffic.

Transportation routes and locations must be lighted sufficiently and appropriately for use by employees and vehicles. The lighting must be designed so that it is even and anti-glare.

Transportation routes in buildings

Danger-free access to and from the workplaces must be guaranteed for the employees. Transportation routes must be well marked off from operational and storage areas (transportation route widths, safety clearances to workplaces, etc.)



Transportation route limits must be marked on the floor so they are clearly visible and permanent.

Limitations in the form of railings have proven themselves at building exits. They effectively prevent direct access to transportation routes.

Escape and rescue routes

The exiting of buildings via emergency exits and escape routes must be ensured in case of danger. The emergency exits and escape routes must be marked so they are sufficiently, permanently, and easily visible as such.



The command must be given on escape routes and emergency exits:

- People should seek a safe area (outdoors), in as short a time as possible via the shortest route possible
- They may not be blocked or boxed in at any time.

Doors, power-operated gates, etc. must open in the direction of escape without tools.

Emergency lighting for escape routes is required if on failure of the general lighting it is not guaranteed that people could leave their workplaces.



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Transportation routes outdoors

Safety can be increased through a strict separation of pedestrian and vehicle routes, especially in an operation with floor conveyors (fork lifts). Sensible here are barriers (railings) along the danger zone.



1.1.11 Plants that must be inspected

Equipment that must be inspected includes all plants and tools that are designated as such in provisions and standards under public law, which through wear, even in case of proper use, represent a hazard for employees.

The term "equipment that requires inspection" includes, e.g. moving plants and tools, lifts, presses, and floor conveyors, etc. Static tools also fall under this term, such as accumulators, pipelines, burden chains, lifts, etc.

In addition to daily maintenance and monitoring by the operating and maintenance personnel or other people commissioned by the company, the accident prevention regulations as well as laws and ordinances may if necessary prescribe regular inspections by professionals at specified intervals.

The operator of the plant that must be inspected must ensure that the prescribed inspections are performed in timely fashion.

Repeated inspection

For different equipment subject to inspection, the provisions and standards of public law prescribe at what intervals the inspections must be provided. Similarly, here there are notes about inspection content and the necessary qualification.

For German group companies, TKT has created an inspection checklist "Regular tests for plants and tools" based on EU law. This overlaps with the catalog of Uhde Services GmbH.

Documentation

For the documentation of the inspections and their results, inspection books and inspection cards are kept. The inspections are marked using inspection tags. The operator of the plant must ensure that any defects determined are eliminated as quickly as possible by a person he commissions. The elimination of the defects must be confirmed with a signature in the inspection book.

The operator of plants subject to inspection must guarantee that the inspection books are kept properly.



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Authorized inspectors

For many kinds of equipment subject to inspection, particular requirements are made of the inspector. According to these:

- An authorized person is a person who thanks to their completed professional training, their professional experience, and their recent professional activity has the required professional knowledge to inspect the tools.

1.1.12 Risk assessment

Various provisions and standards under public law obligate the company to assess the work conditions from which risks can arise.

The results of such an assessment must be documented, the specified measures and results of their inspection must be evident from this.

In addition to the usual regarding of the technical equipment for the prevention of occupational accidents, the occupational health hazards arising and the ergonomic workplace design are assessed.

The goals of risk assessment are:

- The determination of types of hazards in work areas
- The specification off the required protection goals and measures
- The implementation of the measures and effect monitoring

Risk assessments are carried out:

- On all existing workplaces at regular intervals, especially after process or flow changes
- Before/after the procurement of new machines and plants as well as before/after the introduction of new work procedures, production flows or new hazardous substances
- In justified cases, e.g. after the occurrence of special or severe occupational accidents and work-related illnesses



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Execution and documentation

To avoid level differences in the area of safety and health protection in the individual company divisions of ThyssenKrupp Technologies, ThyssenKrupp Technologies has created a guideline for the execution and implementation of risk assessment. Uhde Services GmbH's "Guideline for risk assessment" has been adapted on the basis of this TKT guideline AS 06.

The guideline regulates:

- The composition of the assessment team
- The necessary steps
- The content and form of the documentation

The responsibility for the execution of the risk assessment lies with the respective responsible manager. Occupational physicians and the occupational health and safety specialists assist managers in the course of their advising activities.

1.1.13 Hazardous substances

Hazardous substances are substances, preparations, products, intermediate products, and other chemical materials that represent a hazard or a burden to people or the environment.

The following shall continue to be marked as hazardous substances:

- That arise or are set free during manufacture or handling of substances and that possess the abovementioned hazardous characteristics
- That according to experience as preparations and product can transfer illness











Hazardous substances can arise as solids, liquids, gases or aerosols (e.g. as pastes, vapors, dust, etc.). Absorption into the human body can occur through breathing in, swallowing or through the skin. Here, acute or chronic damage to health can occur.

The company or respective operational manager is responsible for the use of hazardous substances as well as for measures to avoid damage to health. Before handling hazardous substances, he must determine the extent of the anticipated hazard and specify suitable protective measures.



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According to their hazardous properties, hazardous substances can demonstrate the following properties:

Explosive	E		Harmful to health	Xn	
Highly flammable	F+		Irritant	Xi	
Flammable	F		Sensitizing		
Flammable			Carcinogenic		
Oxidizing	O		Harmful to fertility		
Very poisonous	T+		Mutagenic		
Poisonous	T		Hazardous to the environment	N	
Corrosive	C				

Hazardous substances can also cause chronic damage in other ways.

The Management Board and the respective managers are responsible for the use of hazardous substances as well as for measures to avoid damage to health. Before handling hazardous substances, therefore, the extent of the anticipated hazard must be determined and suitable protective measures specified (see also 1.1.9 Procurement).

Use of new materials

The Management Board, the commissioned order/project manager or the managers must inform the occupational health and safety specialist during the planning of the use of new materials and present the material safety data sheet for the new material. If it is a hazardous material or a material for which a hazardous material can arise as intermediate or end product, the use of as harmless a substitute substance as possible must be checked. Only after a substitute material inspection has been conducted and approved by Health, Safety & Environmental Services and the company physician may the material be ordered.



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List of hazardous substances

According to TRGS 222¹⁾ "List of hazardous substances" the employer is obligated to keep a list of all hazardous substances determined that are handled in the operation. ¹⁾ technical rules for hazardous substances

This list of hazardous substances can serve as the basis for the hazard assessment of the respective work areas, for the creation of work instructions, and the specification of protective measures in the workplace.

The list of hazardous substances must be kept so that it is available at all times and it must be accessible to all managers and employees. In addition to the operational archiving, a copy must be kept in a central location (e.g. operation entrance) in order to be able to hand it out in case of emergency to the fire department, the ambulance, and other professionals as an information basis.

The list of hazardous substances must contain at least the following details:

- The work area and area of use
- The trade name and the name under which the hazardous substance is used in the operation
- The manufacturer or supplier
- The hazard marking
- Details about the classification if it is a flammable liquid
- Details about the classification of the water hazard
- The annual consumption
- The date of creation of the material safety data sheet included by the manufacturer or supplier

The list of hazardous substances must be updated in case of significant changes and checked at least once a year to make sure it is up-to-date. Updates are required in case of:

- Adoption of new hazardous substances
- Change of the classification(s)
- Change of the quantity ranges
- Change of the work area in which the hazardous substance is handled

Packaging and marking

Hazardous substances must be in secure containers and packaging. This principle applies both for internal transport as well as for the filling or repackaging in smaller packages.

Hazardous substances must be marked by the manufacturer or supplier as follows:

- Marking of the substance or preparation
- Name and address of the manufacturer
- Hazard symbol and hazard marking



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- Note about dangers
- Safety advice

If hazardous substances are refilled in the plant's own containers or packaged in other containers, these must also bear the markings mentioned above; only the manufacturer and supplier details may be omitted.

Storage of hazardous substances

Hazardous substances must be kept in a place not accessible to everyone or stored so that the concerns of occupational, fire, and environmental protection are taken into account. For this, suitable measures must be taken in order to prevent misuse.

In case of the emission of hazardous substances, also for the immediate use, the hazards associated with the use must be clearly recognizable.

The storage of hazardous substances must occur exclusively in the container systems and rooms intended for this.

Hazardous substances may not be stored in containers that could cause confusion with foods.

In the workplace, only such quantities of hazardous materials may be stored that are required for the daily flow of work.

Risk determination and assessment

An activity during which hazardous substances are handled may only be taken up if a hazardous substance-related risk determination and assessment has been conducted in advance (the so-called work area analysis, if necessary associated with hazardous substance measurement) and the required protective measures taken. Here, the absorption of hazardous materials through the skin and explosion protection must be taken into consideration.

If the emission of one or several hazardous substances into the air in the workplace can occur even after the execution of technical protective measures in ranking:

- Prevention of the emission of hazardous substances
- Detection of hazardous substances where they arise and their elimination without danger
- Ventilation measures according to the state of technology

It cannot be safely excluded, then the responsible manager must make further determinations with the support of the occupational health and safety specialist.



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If technical protective measures alone are not sufficient or are not possible, additional measures must be taken in the following sequence:

- Organizational protective measures
- Personal protective measures

With the use of biological materials, an additional specific risk assessment must be conducted for these materials.

Work instruction

The respective managers must create work instructions for the handling of hazardous materials according to § 20 GefStoffV^{*)}. These work instructions must clearly describe the hazards for human beings and the environment. The work instructions must contain the following: ^{*) German act for hazardous substances}

- Material designation
- Indications of hazards for human beings and the environment
- Behavior in case of hazardous situation
- First aid
- Indications about proper disposal

Each work instruction must be written in easy-to-understand language and posted in a suitable place in the operation. Responsibility for creating work instructions lies with the occupational safety and health specialists if necessary including the responsible hazardous substance office of the group.

Note: If only a small risk arises from the workplace-related risk determination and assessment, no work instruction is necessary. For example, for a glue tube marked “flammable.”

Instruction

Every employee who handles hazardous substances must be informed about the hazards using the work instruction or other documents as well as about protective measures. The instruction must take place before the first handling of the hazardous substance and after that depending on the hazard potential, at least once a year, orally and workplace-related. The content and time of the instruction must be recorded on the instruction form and confirmed by the person instructed with a signature.

The instruction forms must be kept, a copy must be forwarded to the occupational health and safety specialist.



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Hazardous substance office

The ThyssenKrupp Technologies Hazardous Substances Office advises all operations on all hazardous substance questions. Its tasks include especially:

- Advising the company on all questions involving the handling of hazardous substances
- Trainings about hazardous material issues
- Plant inspections in the course of advising activities
- Representation of the company on the association level
- Measurement of hazardous substances
- As-needed viewing of all relevant company documents, e.g. lists of hazardous materials, material safety data sheets, occupational medical examinations, correspondence, etc.

1.1.14 Ergonomics

1.1.14.1 Lighting

Light (lighting) is not just illumination of the workplaces, but rather a productivity factor. Investigations show that productivity increases, the error rate sinks, exhaustion sets in later, and the accident frequency declines.



The human eye is, with the help of light, the most important receiver of information. People take in approximately 80% of all information and sensory impressions via the eye.

Quality of lighting

The capability of the working person to see, to detect objects, to absorb information, to be able to read a text, and understand the information it contains make particular requirements of lighting.

Lighting must be set up so that good visual conditions, especially through a balanced relationship of the light densities in the visual field, are achieved.

Inspection of the lighting

The illuminants are subject to a performance decline in the course of their lifespan. Therefore, lighting equipment must be inspected regularly. The inspection occurs as an orienting measurement of the existing actual to target lighting strength in Lux (lx).

The results of these inspections are transferred into the documentation of the risk assessment according to Chapter 1.1.12.



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1.1.14.2 Noise

Any type of noise burdens hearing, even if this occurs unconsciously. Therefore, the requirement of workrooms must be to keep the noise level as low as possible depending on the type of operation.



Execution of noise protection

The implementation of the above requirements occurs through the creation of a noise registry for the company location. From the measurement results, noise minimization programs will be formulated insofar as these are necessary. The updates of the measurements will be conducted at sufficient intervals and after changes to work procedures/flows. The deficits determined will be transferred into the risk assessment documentation.

For the planning and procurement of machines and plants, the appropriate departments at the manufacturers and suppliers must be queried about noise emissions; these values must be checked for their value with respect to the use.

Compulsory marking

High noise level areas with a hazardous noise level must be marked with a warning sign for the use of hearing protection.

Instruction

Employees who work in high noise level areas must be instructed about the meaning of measurement results, the hazards of noise, as well as protective measures taken or to be taken by their supervisors.

Medical surveillance

Employees who are exposed to hazards/burdens by noise must be examined by the authorized company physician before beginning their activity and at regular intervals.

1.1.14.3 Vibration

Depending on the frequency, intensity, exposure, and duration of the exposure, vibrations and mechanical vibrations can compromise the well-being, the capability, and the health of the employees.





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Effects

Hand-arm vibrations are transmitted to the hand and arm area during work with chisels or drill hammers and hand grinding machines, etc.; these can cause bone and joint damage, circulatory disorders, and nerve function disorders of the upper limbs.

Whole-body vibrations are transmitted via the feet of the standing person or via the bottom of the sitting person (fork lift, truck, etc.). They can cause mental disturbances (feeling of seasickness with deep-frequency vibrations), exhaustion, concentration problems, and visual disturbances.

Protection goals

For the procurement of tools and plants, attention must be paid that these do not emit unbearable vibrations for the employees.

1.1.14.4 Climatic factors

Climate is the general term for physical variables that affect the heat exchange of the body with its environment. The effect on people is determined by the standardized climatic factors:

- Air temperature
- Humidity
- Air velocity
- Radiation temperature of the environment

Protection goals

Human capability, health, and well-being are only a given if the body core temperature of approximately 37°C is maintained. According to the climatic factors mentioned above, the human body emits more or less warmth into its environment. Therefore, an acceptable climate must be maintained in all workplaces.

Measures

Insofar as no acceptable breathing air is ensured through "free ventilation" (exchange of the room air through wind pressure), ventilation equipment must be provided. This especially if there is process-related pollution of breathing air, e.g. welding smoke or something similar.

The climatic factors in the workplaces must be adapted to the task at hand.



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1.1.14.5 Manual handling

Based on various characteristics and unfavorable ergonomic conditions (e.g. weight, size, etc.), the manual handling of loads can present a hazard to the lumbar spine. The backbone is usually what bears the injury and here especially the disks.



Thus, one of the main causes of disk illnesses is addressed, many people's lack of movement. Added to this is the unphysiological lifting and carrying of heavy loads. Of decisive significance for the loading of the spinal column is the body posture maintained during lifting and carrying. Whenever possible, the load should be carried with a straight spine and close to the body. With body postures deviating from this, the pressure on the affected disks increases drastically.

Protection goals

Hazards to the safety and health of the employees, especially for the lumbar spine and the joints must be kept as low as possible according to ergonomic scientific knowledge.

Measures

It must be checked to what extent increased loads and hazards for the employees arise due to bodily burdens, in order to be able to derive suitable technical and organizational measures. The results must be transferred into the risk assessment.

The inspection can take place using the characteristic method "lifting and carrying" as well as "pulling and pushing loads."

1.1.14.6 Activities that burden one side of the body

Activities that burden one side of the body are, e.g.:

- Work in forced postures such as squatting, kneeling, standing, sitting, lying down, turned, bent, overstretched (overhead) and due to cramped room relationships such as holding and pressure procedures
- Constantly-repeating work steps, as during piece goods handling, during palletizing and picking by hand
- Repeating movements of smaller muscles of the fingers, hands, arms with a relatively high motion frequency



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Measures

Risk assessments must be carried out for this. Here, possibilities for improvement must be determined, with respect to:

- Workflow design
- Procedural changes
- Technical tools
- Organizational flows

1.1.14.7 Office and screen work

Work in offices and on screens can present one-sided bodily and psychic loads and other health hazards. Causes of this are, e.g. one-sided loads and static body postures.

These burdens express themselves, e.g. via head and muscle pains on through to various complexes of complaints, which can then cause work-conditioned illnesses of the locomotor system, the eyes, the sight, the skin, the breathing organs, and the psyche.

In addition, the misuse of design and safety regulations in office workplaces can cause typical office accidents such as falling and stumbling with various injury consequences.

Protection goals

An ergonomically-designed office/screen workplace reduces the loads and hazards named. The goal is to promote health in the workplace.

Alternating “sitting and standing“ is an important prerequisite for the healthy maintenance of the human support and musculature. Standing desks or retrofittable attachments for desks represent a sensible addition to the workplace.

Measures

It must be checked to what extent there are increased burdens and hazards for employees in order to derive technical and organizational measures from this. This occurs through an ergonomic design of the workplaces (arrangement of the tools, work environment, lighting, etc.) and through training of the employees about proper use of the equipment.

The results must be transferred into the risk assessment.



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1.1.15 Radiation, laser, electromagnetic fields

N/A

1.1.16.1 Fire and explosion protection

Preventative fire protection measures should:

- Reduce the danger of the occurrence of fires
- Ensure the early reporting and successful fighting of a fire
- In case of fire, enable the rescue of people in peril
- Limit fires to the smallest possible space
- Keep subsequent damage low



Responsibility for fire protection

The Management Board bears the responsibility for fire protection. This applies both for the protection of the employees as well as for the protection of the tangible assets present in the company.

The responsibility includes that construction systems in the operation are arranged, set up, and especially maintained so that the arising and spread of fires is prevented.

According to the operational organizational structure, at Uhde Services GmbH the responsibility for operational fire protection is transferred in the course of the delegation of duties to the managers. These are advised in all questions of preventative fire protection lies by the fire protection coordinator, the health and safety specialist, and the public fire department.

Fire protection coordinator

See 1.1.7

Fire protection inspections

An operational inspection for the checking of fire prevention measures must be performed regularly, at least every two years. Here, all operational parts of Uhde Services GmbH will be visited.

The goal of fire protection is to locate weak points, to document them, and to ensure that they are removed in cooperation with the people responsible.



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The responsible people in the respective department take part in the fire protection inspection:

- The operations manager or his representative
- Occupational safety officer
- Occupational health and safety specialist
- Fire protection coordinator
- Works Council

A written report will be created about the result of the fire protection inspection. Defects listed must be eliminated immediately.

Fire response personnel

The respective managers name the employees who assume the tasks of firefighting and the evacuation of the employees. The number, training, and equipment of the employees named must be in a reasonable relationship to the number of employees and the special dangers.

At Uhde Services GmbH, the specification of the minimum number of fire response personnel occurs as follows: In production areas 10%, and in administration areas 5% of the employees present.

The education and training of the fire response personnel is conducted, depending on need, by external or internal offices (e.g. by the fire protection officer, occupational health and safety specialist or the local fire department).

Fire protection requirements

Uhde Services GmbH's fire protection requirement should ensure that all people engaged in fire protection are informed about their tasks and duties and in an emergency, thanks to sensible behavior and purposeful measures, employees and company assets will be protected against great damage.

The fire protection requirement especially includes regulations about preventative fire protection, e.g. permits for welding and burning work and work with spark formation, etc. behavior in case of a fire, alarm plan "occupational safety and fire protection," as well as instructional aids for employees.

Evacuation plan

It is the responsibility of the managers to specify the technical and organizational prerequisites for the quickest possible evacuation of the employees using an evacuation plan.



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Technical and organizational prerequisites are, e.g.:

- Alarm signal via loudspeaker or something similar
- Set-up and marking of collection places
- Naming of evacuation assistants and their training
- Instruction of all employees
- Execution of evacuation drills (if necessary, with the participation of the fire department)

1.1.16.2 Property-insurance-related risk management

For the reduction of property and business interruption risks, a risk management system has been installed at ThyssenKrupp Technologies.

The basis of this system are the best practice guidelines, which describe, regardless of regional legal regulations, wide-reaching minimum standards that are binding for all group companies of ThyssenKrupp Technologies.

Principles

The tasks of the corporate department Health, Safety & Environmental Services include the analysis and assessment of risks and their logging, the formulation of guidelines for risk reduction, the so-called best practice guidelines (BPGs), and sustainable risk control.

The analysis and assessment of risks in the group companies is guaranteed and logged during rotating audits. Defects determined must be countered with measures and eliminated within defined periods of time. The results are analyzed statistically and serve, among other things, for the creation of group-internal benchmarks.

An annual report to the Executive Board shows the respective status and progress of risk management.

1.1.16.3 Best practice guidelines

The best practice guidelines (BPGs) are the result of workgroups used, consisting of maintenance, production, occupational safety, fire protection, construction, and others. They describe organizational, technical, and person-related requirements and provide examples and assistance for their implementation.

The goal of the BPGs is to record technical and organizational risks uniformly and to be able to assess them. They also offer the opportunity for risk controlling and the auditing of the operations assessed.

With this instrument, the basis of the risk assessment is made uniform and the risk potential of the companies controllable.



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The technical/organizational content of the BPGs enables a worldwide application in all group companies. The specifications of the BPGs must be checked by the Management Board and implemented on their authority.

Important: Risk assessment

As part of a risk assessment, the condition of the current plants will be determined, taking into account the applicable local specifications and technical regulations. If necessary, the resulting definition of required measures should be based on a cost/benefit analysis; this applies particularly for any measures that are associated with high investment costs (including consequential costs). Priority should be given to the following parameters relating to the specific situation:

I. Probability of damage occurring, e.g.:

- Do the type and age of the plant in question represent a risk in terms of the probability of failure or susceptibility to damage?
- Are there any production-related or other sources of ignition (cigarette butts) and/or flammable/explosive media present?
- Are there any potential sources of danger in the vicinity?
- Is the site (or sections of the plant) at risk from natural hazards such as flooding, frost, storms, hail, lightning strikes, earthquakes etc.?

II. Possible extent of damage, e.g.:

- Possible physical spread of a fire
- Possible duration of business interruption due to renovation work or replacement times
- Likely total damage, including material damage and business interruption

III. Delivery reliability factors, e.g.:

- Is the group company an exclusive or key supplier or are there several suppliers of a product?
- Is "just in sequence / just in time" delivery used and/or is there an "emergency buffer" in place?
- Is there any backup capacity for short term internal or external transfer of production?



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IV. Effects on group or image problems, e.g.:

- Will the failure of the IT servers or production facilities also have an effect on other TKA locations?
- Would the loss of a customer due to delivery problems have a detrimental effect on the customer relationship at other TKA locations?
- Could an occurrence of damage result in a significant environmental impact and damage to the company or group's image?

If a "worst case assessment" of the above parameters reveals that there are incalculable or unacceptable risks, the measures listed below should be implemented selectively. Alternative measures that provide the same level of security in another way are also permitted.

The BPGs are published on the TKT intranet on the pages of the corporate department Health, Safety & Environmental Services.

1.1.17 Special risks

1.1.17.1 Work on electrical installations

The goal of the set-up and operation of electrical systems as well as the handling of electrical tools is to provide optimal protection for people and tangible assets.



Taking into account provisions and standards under public law, technical and organizational prerequisites must be created that fulfill this goal and keep the systems and tools in orderly condition.

Set-up

All activities during the set-up and changing of plants and network systems must be planned and executed only by authorized trained professionals. A risk assessment must be carried out and documented.

Installations and installation work must be selected and dimensioned according to the type of operation and the voltages specified so that no hazards arise to people through direct or indirect touching. The same applies for the protection of dangers due to short-circuit and for fire and explosion protection.

Electrical installations must be inspected properly before the initial start-up after set-up and after changes, the results of this inspection must be documented.

Operation and maintenance

The electrical and non-electrical work must only be performed by authorized people. Here too, a risk assessment must be carried out and documented.



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During work on and near electrically-active parts:

- The five safety regulations must be adhered to
 - 1) Approval
 - 2) Secure against switching on again
 - 3) Determine zero voltage
 - 4) Ground and short-circuit
 - 5) Cover or restrict access to adjacent live parts
- The safety distances must be adhered to with respect to live parts, and
- In addition, the wearing of personal protective equipment must be adhered to consistently

Work on live parts is only permitted in justified exceptional cases taking into consideration and adhering to special protective measures.

Electrical systems, all mobile tools and equipment (e.g. also voltage meters) must be inspected appropriately. Here the inspection schedule and the specifications for the qualification of the inspectors must be adhered to. With the exception of the visual inspections before taking up work, the results of the other inspections must be documented.

1.1.17.2 Securing cargos

Provisions and standards for road traffic under public law and for load securing, as well as civil law liability forms transfer the responsibility and the responsibilities for loading vehicles and road transport, depending on regional circumstances, to the sender, that is, to Uhde Services GmbH.



Transport of goods

To avoid liability problems when sending goods, the commissioning of transport companies by Uhde Services GmbH must take place in writing. Additional regulations must be applied according to the regional circumstances.

1.1.17.3 Control and operation of power-driven tools

Power-driven means of transport (fork lifts, lifting work platforms, floor and basket-controlled bridge cranes, passenger floor conveyors) handle a significant share of transport within the company.





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Due to the various possibilities for deployment and the large quantities of loads to be transported, however, the risks to people and the environment also increase.

The ability and care of employees as well as the technical state of means of transport therefore largely determine the danger-free transport of loads.

Essentially during the deployment and use of power-driven means of transport, the local circumstances must be taken into account.

The hazards and loads for the employees must be determined and assessed. The results must be transferred into a risk assessment.

Medical surveillance

Through occupational medicine preventative examinations (here G-25) and regular follow-up examinations, it must be ensured that drivers of power-driven means of transport are physically and mentally in a position to do this (see 1.1.19).

Practical and theoretical training

Before the independent driving of power-driven means of transport, a practical and theoretical training must be completed. The ability to drive must be proven and documented. The operating personnel must be trained continuously (at least annually) by the responsible manager.

Authorization

The operating personnel must be commissioned in writing by the Management Board with the task of driving power-driven means of transport.

Inspections to be carried out

Before each trip, the operating personnel must convince itself through visual and functional inspection of the function of the safety equipment. In case of obvious defects, these must be reported immediately to the responsible manager.

Depending on the local circumstances, the devices must be inspected with respect to safety-relevant equipment. The inspection results must be documented.



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1.1.17.4 High-up workplaces

Activities in high-up workplaces are associated with an especially high risk of accident. High-up workplaces are, e.g. on scaffolds, crane systems, roofs, loading ramps, machines and plants, etc.



Measures

High-up workplaces must be designed so that the constructional set-up, the changing building conditions, the weather relationships, and the respective activities guarantee safe work.

These include:

- Safe access
- Stable locations for the people employed there and
- Effective safety rails

Safety rails for people

If in an individual case for unavoidable reasons the equipment is not created as above, equipment for catching falling people must be present. This equipment for catching falling people can include protective nets, safety scaffolds, and protective walls on inclined surfaces. If this equipment is not suited for the work to be performed, personal protective equipment may be used to prevent falling. For this, suitable attachment equipment must be present.

When using PPE for falls, a risk assessment must be carried out and documented.

Openings in floors, ceilings, and roof surfaces must be provided with equipment that prevents people from falling, falling in or stepping in. For smaller floor openings, a cover is sufficient, which is of sufficient carrying capacity, securely fastened, and fastened against slipping away.

Medical surveillance

It must be ensured through occupational medical preventative examinations and regular follow-up examination that employees active in high-up workplaces are suited for this in terms of their health.

1.1.17.5 Working in confined space

For work in confined spaces and containers (e.g. kettles, tanks, pipelines, cavities, ditches, hollow rooms in buildings or machines) there are special dangers due to the confined spaces. These can include a lack of



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oxygen, the presence of gaseous or liquid hazardous substances, electrical power or work in forced postures. The work in confined spaces includes all activities such as:

- Manufacturing tasks
- Modification work
- Maintenance work

The term “working in confined spaces” also includes driving into confined spaces. Driving into confined spaces includes all climbing in, driving in, crawling in or also “only” bending in.

Special main accident areas are especially:

- Cleaning work including removal of remaining quantities
- Surface treatments
- Handling of electrical lights and electrical tools, welding and cutting work, as well as
- Warming work with the flame for pre-warming, flattening, and shrinking

Measures

Work in confined spaces may only be performed if there are sufficient access openings and if they are arranged such that the “confined space” can be exited quickly at any time and the rescue of people is possible. For subdivided rooms, this also applies for openings in the intermediate walls.

In order to be able to leave a confined space quickly and to carry out a rescue of people, it is necessary that as of a particular circumference of the “confined space” there must be opposing openings.

In order to be able to detect the hazards in the respective case, documented risk assessments must be carried out.

Responsibility

Work in “confined spaces” may only be begun after the granting of written permission. This work must be managed by a professionally-suitable supervisor.

1.1.17.6 Work involving fire hazards

Work involving fire hazards includes welding work, soldering with flame, burning, cutting and grinding, laser work, and more.



The hazards for people and tangible assets are especially great if work involving fire is performed outside of the workplaces set up for this. These include especially hazards due to electrical power, UV radiation,



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extreme temperatures, noise, flammable materials or materials that present health hazards, gases, vapors, smoke and dust, as well as excess oxygen and lack of oxygen.

Measures

Before beginning work involving fire, written approval must be granted, in which all hazards and the protective measures to be taken are listed. Taking into account provisions and standards under public law, technical and organizational measures must be taken that enable a safe performance of the work.

Here too, a risk assessment is a tool that must be carried out and documented.

Responsibilities

Responsible for the performance of work involving fire are the respective managers of the line organization, the company's employees performing the work, and the representatives of contracting companies.

1.1.18 Personal protective equipment

If through technical, organizational or other preventative measures the possibility cannot be excluded that the employees are subjected to accident or health hazards, then Uhde Services will make available appropriate personal protective equipment and ensure that this is functional and in perfect hygienic condition during the entire use. The company bears the costs of this.

Personal protective equipment includes all equipment parts that are determined to be used or worn by employees in order to protect them against a hazard to their safety and health.

The employees must use the PPE made available, handle it properly, and if necessary, use only inspected protective equipment.

Uhde Services reserves the right to re-purchase or maintain PPE that has been lost due to employees' actions or made unusable at the employees' costs.

Procurement

For the planning of the deployment of PPE, the responsible manager must inform the occupational health and safety specialist and provide a product description as well as a sample. After inspecting its suitability for the deployment area, in consultation with the manager, one or several employees will be commissioned to test the personal protective equipment. Only with a positive test result may this PPE then be procured and used.

The responsible manager is responsible for the supply and handing out of the PPE.



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There must always be a sufficient supply of the required PPE on hand.

PPE catalog

Due to the variety of work that is performed by Uhde Services, it is hardly possible to create a general PPE catalog. For this reason, during the kick-off meeting special dangers will be pointed out in order to create an order-specific catalog that goes beyond the standard requirements of PPE.

PPE standard requirements at Uhde are:

Head protection such as protective helmet, bump caps, head protection hoods, and hair nets must be made available by the operation and used by the employees if head injuries due to bumping, swinging loads, falling or toppling objects, the spraying of liquids or loose hanging hair can be anticipated.



Requirements

Foot protection, such as safety shoes and boots must be made available by the operation and used by the employees if foot injuries due to falling, jamming, falling, toppling or rolling objects, stepping into pointy or sharp objects or due to hot or caustic liquids or substances can be anticipated



Requirements

Eye-face protection, such as goggles, face protection shields, screens or visors must be made available by the operation and used by the employees if eye and/or face injuries due to flying parts, spraying of liquids or hazardous radiation (welding/burning etc.) are anticipated.



Requirements

Hearing protection such as earplugs, ear muffs, encapsulated ear protectors (“Mickey Mouse”), etc. must be made available by the operation if employees are active in high noise level areas. In high noise level areas, the hearing protection available *must* be worn by the employees!



Requirements

Respiratory protection, such as filtering half and full masks, blower-supported, autonomous respiratory protection, circulation-independent respiratory protection, etc. must be made available by the operation if employees are subjected to health-hazardous, especially poisonous, caustic or irritating gases, vapors, fogs or dust or if there can be a lack of oxygen.

Hand protection, such as gloves, hand-leather, etc. must be made available by the operation and used by the employees if hand injuries due to sharp-edged or pointy objects, warm or hot surfaces and liquids as well as due to acids, lyes, and other skin-damaging or skin-absorbent liquids are anticipated.



Requirements



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Gloves may not be worn if there is a danger of catching in moving/rotating work pieces or tools such as drilling, broaching, and milling machines.



Protective clothing/rain gear – flame-resistant suits, chemical protection suits, protective clothing against heat and cold radiation, electrically-insulated protective clothing, aprons, etc. must be made available by the operation and used by the employees if they are working with or near substances that cause skin injuries or that can penetrate through the skin into the body as well as if there is danger of burns, chemical burns, hypothermia, and electrical shock.



Requirements

Height securing equipment – this includes components of a catching system or a partial system for catching people who are falling. These devices must be made available by the operation and used by the employees if there is danger of a fall.



Warning: When using these devices, a rescue concept is required that ensures the rescue of an employee who has fallen into a catching system within max. 20 minutes – otherwise there is DANGER TO LIFE!

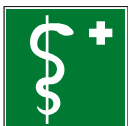
Inspection duties

Particular personal protective equipment is subject to particular inspection duties, which arise from the respective laws, ordinances or manufacturer instructions.

That personal protective equipment that is subject to these inspection duties is inventoried and taken up into the inspection catalog of Uhde Services. This way, a regular inspection with respect to safety and safe use is guaranteed.

1.1.19 Medical surveillance

According to § 11 ArbSchG the “employer” ... is obligated ... “to enable employees at their request irrespective of the duties from other regulations to allow themselves to be examined regularly depending on the hazards to their safety and health at work unless, based on the assessment of the working conditions and the protective measures taken, no health hazards are anticipated.”





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In the sense of the association ordinance A4 (BGV A4) "Occupational medical prevention," preventative examinations are:

- Initial occupational medical examinations before starting work
- Occupational medical follow-up examinations during this work
- Occupational medical examinations after completion of the work

An employee may only be employed if he or she has been subjected to a preventative examination in timely fashion insofar as this is necessary from an occupational medical point of view.

Organization

The personnel department ensures that before starting work, the required occupational medical examination will be conducted. For this, the department registers the employee with the company physician.

Before transfers, the personnel department must obtain an occupational medical opinion or initiate another preventative examination insofar as this is necessary from an occupational medical point of view. Schedule monitoring and invitations of employees to occupational medical follow-up examinations are also undertaken by the personnel department.

Follow-up examinations are initiated by the professional associations.

Examinations

The examinations must be conducted according to the principles for occupational medical preventative examinations of the professional associations. Physicians who conduct the preventative examinations must be dictated by the professional association of, if the preventative examinations are prescribed in a state regulation, authorized for this by the responsible authority. The authorization should take place in agreement between the authority responsible for occupational medical protection and the professional association.

Documentation

The occupational medical service keeps an insurance file for employees who have been examined and documents the preventative examinations.

The data relevant to personnel, e.g. capability, shorter schedules for follow-up examinations, etc. are communicated to the personnel department and stored in the personnel documents. Possible health



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limitations are communicated to the managers of the personnel department, even if this is not immediately relevant for the execution of the activity.

The insurance file and the physician's certifications must be kept for each employee until his or her departure from the company. After that, copies of the excerpts affecting him or her from the file and the physician's certifications must be handed to him or her on request. A copy of the documents handed out must be kept like personnel files.

Occupational physicians are subject to doctor-patient confidentiality!

1.1.20 First aid

The Management Board and the managers must ensure that first aid and the required equipment for rescue from danger to life and limb, especially communication systems, first aid rooms, first aid materials, rescue devices, and means of rescue transport and the required personnel, especially first aid assistants and company medics must be available.



Furthermore, personnel must ensure that after an accident, first aid will be administered immediately and any necessary treatment by a physician will be initiated.

Recording of first aid measures

Records of all first aid measures are kept and stored for at least five years. From these, the following must be clear:

- Name(s) of the injured (insured)
- Date and time of the accident as well as of the first aid administration
- Place (part of the company) where the accident and the injury took place
- Trigger and course of events of the accident
- Type and scope of the injury or illness
- Name of the witness(es)
- Name of the person administering first aid

At Uhde Services GmbH records are kept about smaller incidents at least in an association book or in the form of an internal accident report. Accidents that are subject to reporting are initially reported as internal accident reports to the occupational health and safety specialist. From there, the notification of the occupational accident is provided to the corresponding professional association.



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- Recording of the statistics according to SCC Starting on the 1st downtime day after the accident day
- Duty to report to the professional association Starting on the 4th downtime day after the accident day

First aider

The first aiders take over the care and assistance of the injured or ill people until the arrival of the emergency medical services.

A sufficient number of first aiders must be present, if in the company at least:

- For the commercial area 10%
- For the office area 5%

Of the employees present (per shift) are trained and commissioned.

Training occurs at Uhde Services GmbH in courses of study that are conducted by recognized training organizations, e.g. the Maltese Emergency Service. The first aiders are trained further regularly.

The first aiders are named by the managers and communicated to the personnel department for training. The personnel department organizes the training event and invites the participants. A list of the first aiders named is posted in the appropriate places.

First aid material

The organizational first aid obligations of the company include, e.g. the procurement and provision of the required first aid materials. These should be kept in first aid boxes at Uhde Services GmbH so that they are accessible quickly and easily in sufficient quantity in the area of the workplaces; their orderly condition must be checked regularly. If necessary, the first aid material will be added to and replaced.

Rescue chain

In case of accidents or acute illnesses, in addition to the first aid administered, an emergency call must be made immediately. In order to reach the responsible emergency forces (company rescue service, rescue services in foreign countries), emergency response plans are created at Uhde Services GmbH that are adapted appropriately to the respective orders.

Emergency response plans must be posted!



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For each emergency call, the following details must be provided:

- **WHO** is calling
- **WHERE**
- **WHAT** has happened and
- **HOW MANY** people are affected/injured
- Waiting for callbacks

This way it is ensured that the response teams will be summoned immediately in the appropriate number and sent to the right place, and they will have any necessary special equipment available immediately for a possible rescue or treatment.

The required emergency vehicles drive into the deployment area mentioned in the emergency call. The person making the report must ensure that the response team is led from the arrival point to the emergency location.

The management of the emergency response team as well as the rescue of the injured are the duty of the emergency response team of the emergency medical services. If necessary, they will be assisted by employees of the operation.

The managers will train their employees at least once a year about their obligations to provide first aid.

1.1.21 On-the-job accidents

Industrial accidents are external events that have an effect on the body, which leads to adverse health effects or death. These include all injuries (e.g. bruises, sprains, twists, lifting injuries, contortions, wrenches, skin injuries, muscular injuries, bone breaks, internal injuries, eye injuries, burns, gas poisonings, etc.) must be recorded insofar as the accident took place in the company (within the company/plant boundaries and during working hours). Accidents on business trips are included as occupational accidents and must also be reported as such.



Insofar as occupational, the following health hazards (for example) are not assigned to occupational accidents, but rather to occupational illnesses:

- Degenerative diseases of the skeletal system (intervertebral disk degeneration, arthrosis of the joints...)
- Acute or chronic respiratory diseases
- Skin diseases
- Work-related tumors
- Acute psycho-vegetative conditions

Insofar as such illnesses have caused downtimes, these are kept under occupational illnesses due to illness with/without continued payment of compensation.



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Sick leave

Working time missed due to accidents is recorded starting from the 1st day of sick leave. The day of the accident is not included in calculation of sick leave. For longer periods of sick leave, a maximum time of up to 182 days (= 6 months) is to be recorded.

If incapacity for work sets in at a later date, e.g. if the injury worsens, it begins on the first day of incapacity for work.

Travel accidents

Travel accidents are accidents occurring on the direct route from an employee's permanent residence to the site of their normal working activity and back (site of activity = boundary of company premises/plant). They do not fall under the term occupational accidents, but they must be announced insofar as they are recorded by the company.

Fatal accidents

Fatal accidents are to be reported without sick leave hours. If the death caused by the accident does not occur for several days, the sick leave accrued is included in the sick leave due to accidents.

Instruction

Employees at Uhde Services GmbH will be trained before taking up their employment and subsequently at least once a year about behavior in case of accidents and illnesses.

Accident/emergency response plan

In an "Emergency response plan – health and safety" the procedures in case of a fatal accident, accident with danger to life and limb, mass accident (three people or more), fire, and environmental damage are specified.

This flow chart must be adhered to by the person making the report. The person making the report should be the one who is the first to notice the accident, the emergency or the fire. Internal and external communications are made according to the emergency response plan. The constant updating of the emergency response plans by the respective managers in cooperation with the occupational health and safety specialist must be ensured.



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Operational accident reports

Every accident must be reported to the responsible supervisor and to the occupational health and safety specialist.

In case of accidents that require treatment by a physician, the accident-relevant facts, personal and accident data, and the description of the accident will be documented and a copy transferred to the occupational health and safety specialist and the personnel department.

Accident investigation

Accident investigation serves to determine the flow of the accident and the accident causes. In contrast to preventative risk determination (see 1.1.12) for machines, plants, and work procedures even before the accident event, the accident investigation is simultaneously an event-related risk assessment after an accident event.

The investigation of accidents and near-accidents is an important component of safety work. From the accident investigation measures can often be derived for preventing similar accidents in the future. Essentially every accident is investigated.

The scope of the accident investigation depends on the severity of the accident, the type of hazard, and the probability of occurrence.

Responsibility for the accident investigation lies with the occupational health and safety specialist. All employees of Uhde Services GmbH are obligated to assist the occupational health and safety specialist in investigating accidents.

After clarification of the course of events of an accident, the determination of the accident cause and the specification of occupational protection measures are required.

In addition to the internal accident investigation, in case of severe and fatal accidents, an investigation by the responsible state authorities and/or other institutions may be conducted. The company coordination in these cases is the responsibility of the occupational health and safety specialist.

Accident report

Insofar as an accident is subject to report or a travel accident with an accident-conditioned downtime of more than three calendar days, a report must be made to the responsible professional association and the responsible local government. The respectively-valid form of the professional associations will be used for this.



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In case of accidents involving employees of contracting companies according to the German law on labor leasing (AÜG) who are working for Uhde Services GmbH a copy of the accident report must be sent by the respective contracting company to the occupational health and safety specialist.

Group-internal reporting of severe accidents

Severe accidents in which employees are killed, suffer severe injuries with severed limbs or are rendered unable to work, as well as accidents with high tangible asset or environmental damage must be reported immediately to the corporate department Health, Safety & Environmental Services in Essen. Such reports are made by the personnel department using the form "Brief accident information," which is made available on the ThyssenKrupp Technologies intranet.

The accident reports will be forwarded by the corporate department Health, Safety & Environmental Services to the Executive Boards of ThyssenKrupp AG and ThyssenKrupp Technologies AG.

1.1.22 Internal audits

Objective

Internal audits for health and safety protection and risk management check the organization for the application, effectiveness, and purpose with the goal of revealing weak points and making improvements and taking corrective measures.

Requirements of auditors

Auditors from the ThyssenKrupp Technologies segment must have particular theoretical and practical knowledge. This knowledge is communicated by external professional institutions in multi-day seminars. Additional details about the training content are recorded in the best practice guideline No. 3 "Training concept for employees and managers." In addition, regular professional training measures must be carried out and documented.

Execution

The execution is described in the best practice guideline No. 2 "Execution of audits for occupational health and safety and risk management".



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1.1.23 Information exchange

Accident statistics

The occupational health and safety specialist must keep accident statistics and distribute these regularly to the managers.

The statistics generally include the following information:

- Absolute number of accidents that must be reported as well as their assignment to the respective operational areas
- Accident frequency based on 1 million hours of operation
- Downtime due to accident
- Injured body parts
- Accident progression in comparison to the previous year

Using the statistics, it is easier to recognize main accident areas and if necessary, to take countermeasures. These are an important instrument for making accident events transparent and should contribute to safer behavior on the part of the employees.

The accident statistics will also be transmitted monthly by the personnel department to the ThyssenKrupp Technologies corporate department "Health, Safety & Environmental Services" via the info system "PERSIS." From this there arise plant-spanning accident statistics that flow into the Executive Board statistics.

Health and safety committee

Quarterly, the Management Board will call a meeting of the health and safety committee. The participants in this session will be invited in writing, with specification of the agenda.

Discussed will be, e.g. current developments in the area of occupational safety and if there is a need to act, uniform strategies and procedures for implementation will be agreed upon.

A report about the content of the health and safety committee meetings will be kept by the occupational health and safety specialist and published by the Management Board.

Posters will be prepared about the execution of operational SGU actions and posted at the appropriate time.

Exchange of experience about health and safety

An exchange of experience takes place between the occupational health and safety specialists on a quarterly basis.



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Suggestion system

The goals of the suggestion system include, in addition to the increase of economic efficiency and the efficiency of the company, also the improvement of working conditions. Safety and health protection in the workplace rank especially high here.

Occupational health and safety specialists and company physicians assist in the assessment of suggestions for improvement with respect to occupational safety and health protection.

1.1.24 Training measures



As experience and accident events have shown, safe work must be learned. An extensive training, regular instruction, and information, but also the motivation of employees in the area of occupational health and safety are the prerequisite for avoiding accidents and occupational illnesses. The seminars and training should help the operational managers, works council representatives, and employees to be able to better carry out their duties in the area of occupational health and safety.

For all member companies, it applies that: Seminars are offered free of charge by the professional association.

The need for seminars is determined by the department manager and the seminars are organized by the personnel department. The personnel department registers the employees for the appropriate seminar days.

Prescribed trainings

Based on legal regulations, proof of the capability and of the required factual and professional knowledge is required for particular activities and groups of people, such as: trainers for fork lift and crane operators, fork lift operators, press operators, radiation protection officers, etc.

Occupational health and safety specialists and company physicians should also complete regular, professionally-related further training.

Documentation

All training and further training measures must be documented and archived specifying the name of the participants, the content and timeframe of the training.