M6-EN.9 WORKING CONDITIONS

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M6-EN.9.1 Housekeeping of the work area

One essential component of good working conditions is good housekeeping. It helps to the prevention of occupational injuries and diseases. Housekeeping includes the proper organization and maintenance of buildings, plants, machinery and equipment; the upkeep of all the sanitary and welfare facilities; and the regular painting and cleaning of walls, ceilings and fixtures. Good housekeeping also includes everyday cleanliness, tidiness and good order in all parts of the workplace. Good housekeeping is important when it comes to good safety practice. Because housekeeping is a maintenance task, therefore it cannot be achieved without the goodwill and participation of everyone in the workplace.

Some important points in observing good housekeeping are given below:

- Layout to facilitate order and cleanliness
- Aisles, passageways, transport areas and exits must be marked. They must be kept clear from obstacles
- Storage areas must be set, for raw materials, finished products, tools and accessories (**M6.9.1.jpg, M6.9.2.jpg)**
- Racks for hand tools or implements above work tables
- Arrangements to remove wastes
- Clear assignment of duties for maintenance and repair of work premises, in particular stairs, walkways, walls, lights and sanitary facilities
- Receptacles for waste and debris in convenient locations
- Floor-covering materials suitable for the work and for cleaning
- Screening and simple devices to prevent deposits of oil, liquid wastes or water on the surrounding floors
- Drainage channels for waste water

– Special groups of persons to carry out daily cleaning and weekly or monthly cleaning

M6-EN.9.1.1 Workshop and passageway floors

Safety Precautions

– Keep all floors clean, dry and especially not slippery

– Wear suitable footwear in vehicle washing areas

– Keep the ramps dry and with non-skid surfaces

– Mark properly all passageways and roadways (e.g. marking with black and yellow diagonal stripes)

– Keep passageways clean, as well as steps, corners and fixed obstacles

– Spills must be reported and cleaned up immediately

Employers must ensure that:

– All surfaces are even, without holes or broken boards.

– Good drainage exist in wet processes

– Floor load capacities are posted in lofts, and spares storage areas

M6-EN.9.1.2 Stairs and ladders

During the use of ladders, one main hazard exists: falls **(M6.9.3.jpg)**. A fall can happen because of several circumstances, such as:

– A ladder that is overloaded or damaged and fails,

– The employees slip or lose their balance while they climb on a ladder

– Existence of oil or grease on a ladder

– Ladders that are not set up securely with a possibility to shift

When it comes to falls on stairways, this can occur when employees slip or trip. Clutter, slippery surfaces, damage, poor lighting, and unsafe work practices can contribute to stairway fall hazards.

Safety Precautions

– Keep all stairs and ladders in good condition

– Keep stairways free of any clutter or slippery conditions

– Avoid to use a broken ladder or stair

– Inspect the ladder prior use

– Do not use ladders in uneven or unstable ground. Prefer a firm, solid surface

– Chose a ladder with adequate length and load limits

– Never tied ladders together to make them longer

– Avoid to use of metal ladders near electrical lines

Employers are required to:

– Inspect regularly the stairs and ladders and repair any damages immediately
– Provide a handrail for the prevention of falls

M6-EN.9.1.3 Slips, Trips and Falls

Many motor vehicle repair garages have a difficulty in maintaining good standards of housekeeping and storage. For many cases this is because to a general lack of space. As a result slips, trips and falls cause many non-fatal injuries. These can be effectively reduced through good health and safety arrangements. Injuries might be a result of:

– Slips of workers (due to oil spillages) **(M6.9.4.jpg)**
– Falls (mostly related to unfenced inspection pits) (see also paragraph 3.3)
– Trips of operators (due to unorganised workplace) **(M6.9.5.jpg - M6.9.10.jpg)**

Safety Precautions

– Isolate a leak of engine oils as soon as it is identified. Stop the flow and use inert absorbent material to contain the spill with
– Never leave oil spillages or grease on the floor; most probable a worker will step on it and slip. Clear them promptly
– Never leave an inspection pit open when not in use (for more safety precautions refer to the relevant paragraph (3.3)
– Always keep a trolley next to you with all necessary equipment on. Do not leave equipment or material on the floor, since someone may trip over them
– Always return the equipment being used to their storage place as soon as you finish your job
– Keep all tools in a tight form
– Store and stack materials and objects

Storage of materials and objects must be done in a way that there is no possibility to fall and cause injury **(M6.9.11.jpg - M6.9.12.jpg)**. The racks and shelves used for the storage must be strong enough and stable for the loads to be placed on them. Usually, racking and shelving is made from lightweight materials and is limited to the amount of wear and tear it can withstand. In order to make sure that racking or shelving installations continue to be functional several actions can be taken, such as regular checks for the identification of damage, encouragement of the employees to report any damage, fix maximum load notices and adhere to them strictly.

Safety Precautions

– Stack material safely on sound pallets
– Give limits for the height of stacks to maintain stability
– Inspect regularly the stacks to detect and remedy any unsafe stacks
– Establish a storage system and instruct and train the employees in stacking
– Provide special arrangements for objects which may be difficult to store

M6-EN.9.2 Light levels

At a workshop, lighting, which consists of general lighting or a combination of general and local lighting, should be enough to allow employees to work and move safely. Adequate lighting is very significant at a workplace, for the following reasons:

- Focus: the human eye cannot focus at the same time on objects that are close and far away. When a person rapidly changes its focus on objects at different distances, the eye becomes tired. This is more often in inspection of an engine, and working on an engine. In such cases, plenty of light must be available, mainly at the area furthest away from the eye.
- Changes in the eyesight: everybody has different eyesight. Some people have weaker eyesight than others do. In addition, the ability of the eye to adjust rapidly to different distances declines, as people grow older. It is very important that older people have adequate lighting.

Daylight is much better than artificial lighting; however, daylight varies with the seasons and the weather conditions. Thus,

- Determine the amount of lighting required no matter the amount of daylight
- Get as much daylight as possible
- Make sure that stored material does not be piled up where it blocks daylight
- Keep windows clean both inside and outside
- In case of a window facing a wall, that wall should be painted white in order to reflect more daylight into the workplace
- It is better that most of the light to fall on the material or objects that employees handle
- The light source should be positioned behind and to the side of the left shoulder if the person is right-handed.

Some important factors for determining the quantity of the light are:

- The type of work (e.g. precision work needs more light)
- The size, form and light-reflecting properties of the material or object, and whether the object is easily distinguishable from the background
- The capability of the surrounding surfaces to reflect light
- Eyesight of the workers

Safety Precautions

- Always provide adequate general lighting as sunlight may become insufficient at different times of the day
- Adequate lighting should also reach every individual working place (e.g. during oil removal) without being shadowed by the employee or part of a machine.
- Use only explosion-proof lighting in spray areas and in paint storage rooms
- Portable lights are not allowed in body shop spray area.
- In case of sudden loss of light, automatic emergency lighting, powered by an independent source, should be provided immediately.

M6-EN.9.3 Warning and safety signs

Several regulations exist to cover various means of communicating health and safety information. These include the use of illuminated signs, hand and acoustic signals (e.g. fire alarms), spoken communication and the marking of pipe-work containing dangerous substances. These are in addition to traditional signboards such as prohibition and warning signs. Fire safety signs (i.e. signs for fire exits and fire-fighting equipment) are also covered. Some examples are given below:

Ear protection for engines testing

Gloves during washing

Shield used during welding

Eye protection for welding process

Mask and respirator during painting

Suitable illuminated signs and acoustic signals must be used at workplaces. Dangerous locations (e.g. where people may slip from spilled oils, fall into inspection pits) and traffic routes need to be marked.

No access for the pedestrians

Industrial vehicles

Areas containing significant quantities of dangerous substances (storage of oil, petrol, solvents, etc) have to be identified by the appropriate warning sign.

Placed at storage rooms

Warning signs represent a hazard level between Caution and Danger. A warning indicates a potentially hazardous situation, which, if not avoided, could result in death or serious injury. Regulations require that employers must provide specific safety signs whenever there is a risk that has not been avoided or controlled by other means, e.g. by engineering

controls and safe systems of work. Where a safety sign would not help to reduce that risk, or where the risk is not significant, there is no need to provide a sign.

Employers have to maintain the safety signs, which they provided, explain unfamiliar signs to their employees and advise them what they need to do when they see a safety sign.

Corrosive material (solvents, cleaning agents, etc)

Toxic material (solvents, paints, etc)

Flammable material (oil, solvents, etc)

Explosive material (petrol, etc)

Marking for dangerous locations (inspection pits, etc)

Warning signs very often have an orange body with a black panel at the top. Warning is written in orange on the black panel. Additional wording and pictograms are printed in black on the lower portion of the sign.

M6-EN.9.4 Ventilation

Employers should ensure that adequate ventilation system exists, and that the dangerous air can be extracted in the open air away from people, sources of ignition and nearby buildings and/or equipment. Although the most effective way of reducing the risks of atmospheric pollution is to enclose the entire process, this is not always possible.

Workplaces must have adequate ventilation. Resulting in fresh and clean air, uncontaminated by discharges from fuels or other process outlets, entering and circulating through the workrooms. Ventilation should also remove and dilute warm, humid air and provide air movement. When the workplace contains process or heating equipment or other sources of dust, fumes or vapours, more air will be needed to provide sufficient ventilation. In many cases, windows or other openings can provide sufficient ventilation, but where necessary, mechanical ventilation systems must be provided. The mechanical ventilation system could be general covering the entire workshop, local covering emissions from specific processes (e.g. booths, baths of dangerous liquids), or be installed on tools and some hand-operated machines (e.g. grinders) **(M6.9.13.jpg)**

The main areas in a vehicle repair workshop that adequate ventilation is necessary are:

- In the repair workshop, due to the exhaust fumes from running engines (see section M6-EN.4.2)
- In the paint spraying booths, due to the rise of fine aerosols, mists and droplets of toxic and flammable liquid (see section M6-EN.4.5)
- In the body filling and sanding booths, due to exposure to dust and fume (see sections M6-EN.4.7 and M6-EN.4.11)

– In the welding and metal cutting areas due to exposure to gases and fumes (see section M6-EN.4.10)

– In the bath area of dangerous liquids, where an air curtain system can be used **(M6.9.14.jpg)**. In this system the air is blown in under pressure from one side and extracted from the other, thereby screening the worker from dangerous vapours.

Fresh air inlets must be adequate and access points for inspection and cleaning inside ducting should be provided. A booth should always have an outward-opening fire escape door in the end wall opposite the booth's entrance. **(M6.9.15pg – M6.9.16.jpg)**

All technical equipment should be well maintained and checked by competent personnel regularly. In order for any ventilation system to work effectively, the filters should be changed at a regular basis, the fans and ducts/pipes should be checked, gaskets/washers replaces and valves inspected.

M6-EN.9.5 Welfare

Employers must provide adequate and appropriate welfare facilities for their employees while they are at work. "Welfare facilities" are those essential for the well-being of the employees, such as washing, toilet, rest and changing facilities, and a clean place for eating and drinking during breaks.

If the work activity requires from the employees to change into and wear special clothing (overalls, a uniform, thermal clothing etc), then employers must provide enough changing rooms for the number of people expected to use them. Wherever a changing room is provided it should be readily accessible, contain, or lead directly to, clothing storage and washing facilities, provide seating, provide a means for hanging clothes (hook or peg), ensure the privacy of the user. The space for workers' clothing storage should be adequate, suitable and secure. All the facilities should be readily accessible from workrooms, washing, and eating facilities and should ensure the privacy of the user. In cases that a pregnant employee exists, employers may need to provide a room for the pregnant woman/nursing mother to rest or lie down.

Employers must ensure that the facilities are kept clean and in good condition, meaning that an effective system for maintenance needs to be put in place. The facilities should also be designed so to respect people with disabilities that might work at the workshop or visit the premises.

M6-EN.9.5.1 Ambient temperature and relatively humidity

At a workplace, comfort depends on air temperature, radiant heat, air movement and humidity. The risk to the health of workers increases as environmental conditions become uncomfortable. For example, the risk of heat stress arises, from working in high air temperatures, exposure to high thermal radiation or high levels of humidity, while cold stress may arise from working in the open air during winter. If an assessment is undertaken, of the risk to workers' health, from working in either a hot or cold environment, it needs to consider both sets of factors - personal and environmental. Personal factors include body activity, the amount and type of clothing, and duration of exposure, while environmental factors include ambient temperature, and radiant heat; and if the work is outside, sunlight, wind velocity and the presence of rain or snow.

In a motor vehicle workshop, high temperatures can usually be observed at car wash areas and during welding processes. Inadequate ventilation and inefficient cooling systems can cause discomfort, incapability to concentrate, heat stroke, exhaustion, cramps and fainting.

Safety precautions

Employers should be aware of engineering and work practice controls providing:

- Good general ventilation avoiding draughts
- Mechanical ventilation (cooling fans and air conditioning) at areas of high heat production and where fresh air supply is insufficient
- Heating systems that do not give off fumes into the workplace
- Large quantities of cool drinking water
- Controls of radiant heat (especially near head level) and of local “hot spots”, arising for example from paint-drying lamps

M6-EN.9.5.2 Sanitary facilities

Adequate toilet and washing facilities must be provided for employees. 'Adequate' means that employers have to provide:

- sufficient toilets and washbasins for those expected to use them
- where possible, separate facilities for men and women
- clean facilities
- a supply of toilet paper, and for female employees means of disposing of sanitary dressings
- facilities that are well lit and ventilated
- facilities with hot and cold running water
- enough soap or other washing agents
- a basin large enough to wash hands and forearms if necessary
- a means for drying hands, e.g. paper towels or a hot air dryer

M6-EN.9.5.3 Drinking water and Coffee break room

Adequate supply of wholesome drinking water, with an upward drinking jet or suitable cups, should be provided. Water should only be provided in refillable enclosed containers where it cannot be obtained directly from a mains supply. The containers should be refilled at least daily. Bottled water/water dispensing systems may still be provided as a secondary source of drinking water.

Employers must ensure that the drinking water they provided is:

- free from contamination and is preferably from the public water supply
- easily accessible by all employees, but in areas where contamination is possible due to the work performed **(M6.9.17.jpg – M6.9.20.jpg**, bad examples)
- adequate supplied (taking into consideration the temperature of the working environment and types of work activity)
- equipped with cups or a drinking fountain
- equipped with taps and containers clearly and correctly labelled as drinking water

Rest facilities should also be provided, being suitable, sufficient, and readily accessible. Rest areas or rooms should be large enough, and have sufficient seats with backrests and tables, for the number of workers likely to use them at any time. They should include suitable facilities to eat meals where meals are regularly eaten in the workplace and the food would otherwise be likely to become contaminated. Where hot food cannot be obtained in, or reasonably near to the workplace, workers may need to be provided with a means for heating their own food. Canteens or restaurants may be used as rest facilities and no obligation must exist for purchasing food. Employers should provide a working environment where people can work without being irritated by tobacco smoke. This can be done by prohibiting smoking in all but a few designated rooms.

M6-EN.9.5.4 First Aid provisions

People at work may suffer injuries. It does not matter whether the injury or the illness is caused by the work they do or not. It is important that they receive immediate attention and that an ambulance is called in serious cases. A workplace should at least have a suitably stocked first-aid box and an appointed person to take charge of first-aid arrangements. There is no obligatory list of contents for first aid boxes. What to include in a first aid box, is based on the employer's assessment of first aid needs that has to be carried out. It is better not to keep tablets and medications in the first aid box. Although there is no specified review timetable, many items (especially sterile ones) are marked with 'Best before dates'. Items with these on should be replaced by the dates given. Any items that have passed their expiry date should be disposed of safely. In cases where sterile items have no dates, it would be advisable to check with the manufacturers as to how long they can be stored.

All first aid boxes must have a white cross on a green background. **(M6.9.21.jpg – M6.9.25.jpg)** Similarly, first aid rooms should be easily identifiable by white lettering or a white cross on a green background. All first aid signs should be placed where they can be seen (not obstructed from view) and easily identified.

If mains tap water is not readily available for eye irritation, at least one litre of sterile water or sterile normal saline (0.9%) in sealed, disposable containers should be provided. When the seal has been broken, the container should not be reused. The container should not be used beyond its expiry date.

Written emergency procedures should exist for cases of accidents, such as major spills and exposures, contact of skin and/or eyes with dangerous and toxic liquids.

M6-EN.9.6 Car wash safety

Safety Precautions

- Remove tools, materials or other objects lying on floors, driveways, in order to eliminate tripping hazards. Clean up all spills (oil, detergent, wax, etc.).
- Inspect tools and equipment before using them and think before starting every job. Search out hazards and take precautions to prevent accidents from happening. Use the protective equipment provided
- Report any unsafe conditions you observe in your work to the immediate supervisor.
- When lifting, be sure of your footing and grip. If the object is too heavy for you, get help from someone to help you

- Keep all oil rages or other flammable waste materials in closed metal containers, not indoors, and preferably be disposed of every day
- Caution labels and signs must be installed whenever necessary
- Vehicle washing can produce wash waters contaminated with dust, dirt, oil, grease, and other leaking vehicle fluids. Do not discharge these contaminated waters to gutters, streets or storm drains

M6-EN.9.6.1 Personal Protective Equipment for car washers

During **steam cleaning operations**, the employees should always wear boots, heavy gloves and face protection to protect from burns. A shot of steam inside a pair of shoes can raise blisters. Hands are burned, if touched by a hot coupling.

Some **car wash chemicals** are caustic and should not come in direct contact with bare skin or eyes (see also section M6-EN.4.12). Whenever handling such chemicals as acid, strong caustics or concentrated solve nets or waxes, employees must wear proper protective rubber gloves, boots and a face shield. (Bad practice in **M6.9.26.jpg, M6.9.27.jpg)**. Employees must wear shoes with neoprene soles, which are resistant to chemicals. These shoes are also more slip-resistant on oily or soapy floors and usually incorporate steel caps for toe protection against falling objects.