

M5-EN.8. PHYSICAL LOADS, WORK DIFFICULTY, AWARENESS AND ABILITY TO ADAPT

M5-EN.8.1. Hard dynamic work

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Short description of the section:

In this section examples of typical physical loads, awareness and ability to adapt in the driver's workplace in a land transportation company are presented and analyzed.

The **goal** of this section is:

- Distinguish types of typical physical loads that a driver of a land transportation company is subject to;
- Present examples of manifestation of physical loads, awareness and ability to adapt and describe them;
- Distinguish the adverse effect of risk factors on human health; and
- Give recommendations for work safety measures.

Material of this section will assist the employee, the employer and the company owner in adjusting recommendations for determining physical loads, awareness and ability to adapt, methods of risk prevention and safety measures for himself and his company.

M5-EN.8.1. Hard dynamic work (M5.8.1.1.jpg)

M5-EN.8.1.1. Risk factors

Hard dynamic work ##G10## may be described as any load handling, lifting or lowering, pushing, pulling, carrying or moving with the use of human force :

In load handling the hazard arises due to prolonged and/or frequent use of physical force.

In the assessment of **hard dynamic work** the following shall be **examined and identified**:

- Is loading and unloading of heavy objects, including passenger luggage, the driver's job task?
- Are heavy objects lifted and carried?
- Are pallets often handled with manual lift?
- Is cargo handled within big height difference?

Adverse effect on human health. Prolonged or frequent hard dynamic work may not only overload the heart and blood circulation system but also distort the body support and movement system. The load experienced by the back while working with weights may result in the following illnesses:

- Acute pain caused by short-term inadequate mechanical loads and obvious limitation of movements (e.g. muscle strain resulting from load lifting, bone fractures in the event of fall while carrying the load across uneven surface, backbone disk displacement caused by load lifting);
- Chronic illnesses caused by prolonged inadequate mechanical loads (ruptured disks, ligament strains, ligament inflammation, muscle split).

These illnesses are most common in transportation sector.

M5-EN.8.1.2. Safety measures

There are always **two possibilities to protect** employees from hard dynamic work

- Avoid manual labour with loads because it puts their health at risk;
- If manual labour is impossible to avoid, the employer shall implement adequate measures to reduce the adverse effect on human health.

This may be achieved with the following **work safety measures**:

1. Use mechanical lifting and handling equipment (e.g. lifting tables);
2. Plan the work (e.g. avoid transitional storage);
3. Delegate loading jobs to adequately trained support staff (not the driver);
4. Properly arrange workplaces and working environment:
 - Ensure that the object is possible to grip and to carry close to the body (enough room for feet and legs, load are taken from shelves);
 - Provide for ergonomically comfortable height for gripping and placing of objects between 70 and 80 cm above ground;
 - Leave sufficient room to manoeuvre with heavy objects;
 - Avoid uneven, slippery or shaky floors;
 - Avoid thresholds, elevations, stairs and ramps;
 - Wear adequate safety footwear;
 - Avoid bad visibility, extreme temperature and humidity.
5. Arrange the loads (e.g. reduce the load, avoid hazardous characteristics of the load, avoid inconvenient and protruding loads; convenient form for gripping; easy to reach load gripping spots; provide for the spots where to attach the object for lifting).
6. Label heavy loads that are impossible to reduce (e.g. indicate the weight, centre of gravity, mark coupling points and places of gripping).
7. Have supportive working means ready (e.g. body belts for carrying heavy objects, soft shoulder pads, handles, lifting platforms, lifting nips, barrows for handling sacks).

8. Reduce the pace of work.
9. Re-sequence activities (tiresome activities interchanged with activities that relieve the tiredness).
10. Provide for sufficient rest-breaks.
11. Give instructions about correct handling of heavy objects.
12. Take care of employees:
 - If they have to work with weights and experience increased physical load, they must have a health check-up by the company's physician and employee's physical data must be examined.
 - If necessary, the company's physician shall regularly examine employees' health and give explanations about proper handling of loads (repeated training etc.).

M5-EN.8.2. Monotonous dynamic work, safety measures

Monotonous dynamic work is such type of work that involves repeated movements using arm, leg, shoulder and back muscles. Monotony of work has a great influence on stress. While doing such work a human being suppresses his emotional and mental activity. Prolonged work under such conditions evokes hatred to the work itself. **(M5.8.2.1.jpg)**

In the assessment of **monotonous dynamic work** manifestation the following must be **examined and identified**:

- Do certain muscle groups (e.g. arms, legs) have a repetitive load (e.g. frequent driving on city streets, in traffic jams, changing lanes without automatic transmission, without gear switching power unit in mechanical transmission or without power steering)?

The following **work safety measures** are recommended to reduce the load of **monotonous dynamic work**:

- Use power steering or automatic transmission etc.

M5-EN.8.3. Working position, work in one position, safety measures

In this case a compulsory **working position ##G5##** and **duration of work in one position** are assessed. The following must be **examined and identified**:

- Is there a possibility to change the working position, i.e. to interchange between standing and sitting?
- Working position:
 - Are there long periods of work in forced body positions (e.g. prolonged sitting without breaks or without facilitating means)?
 - Can the seat be adjusted so that the shoulder bone experiences fewer loads (e.g. armrests, and adjustable seat back for the lumbar area)?

- Work in one position:
 - Do certain muscle groups experience extended periods of load without change of loads (e.g. long driving along straight streets, on highways, etc. without any change of direction)?

The following **work safety measures** are recommended to reduce the adverse effect of **working position and work in one position** on human health:

- Provide for possibilities to change the body position;
- Interchange driving with other activities;
- Auxiliary measures;
- Limited working time;
- Regular breaks;
- Compensating physical exercises;
- Armrests;

M5-EN.8.4. Combined static and dynamic work - work safety measures

In the assessment of **static ##G28## and dynamic work combination** the following must be **examined and identified**:

- Is loading and unloading of heavy objects, including passenger luggage, the driver's job task?
- Does the driver have to put on and remove the seat?
- Are heavy objects lifted and carried?
- Are heavy objects carried with elements attached to their sides?
- Are heavy objects lifted within significant difference of heights?
- Is cargo hauled with considerable inclination (e.g. in the trunk of a car)?
- Etc.

The following **work safety measures** are recommended to reduce the adverse effect of **combined static and dynamic work** on human health:

- Use mechanical lifting and handling equipment (e.g. cranes, lifting tables);
- Delegate loading jobs to adequately trained support staff (not the driver);
- Appoint additional personnel;
- Provide sufficient time for loading and unloading work;
- Train the staff and control compliance with safe load handling requirements;
- Use immobilizing waist band.

M5-EN.8.5. Awareness and ability to adapt, safety measures (M5.8.5.1.jpg)

In the assessment of absorbed scope of information and ability to adapt the following must be **examined and identified**:

- Is abundance of information and auxiliary work (using telephone or fax machine, reading maps etc.) prevented while driving?
- Can the driver be aware of special and warning signals while using the radio or telephone?
- Are the driver's cogitation and intellectual skills suitable for driving in the traffic?
- Is the driver informed about special watchfulness while driving when medication is used?
- Etc.

To avoid safety at work in the event of big flow of information the following **work safety measures** are recommended:

- Not to do any auxiliary work while driving;
- Have navigation systems installed in the vehicles;
- Have regular health checkups;
- The driver shall hold the driver's license;
- Get information from the physician on the therapeutic results and side-effects of medication used.

M5-EN.8.6. Self-study assignment

On the basis of information presented in this section draw a list of **risk factors related with physical loads, work difficulty, awareness and ability to adapt** in the typical driver's workplace in your company.

If the risk factor is defined by standard parameters, name the **regulations** related with the risk factor and **instructions** that have to be complied with.

Choose appropriate **measures (technical, organizational, personal)** for **elimination of risk factors** and determine whether **additional consultation of specialists** is required. If statutory acts provide for such (e.g. pursuant to legal acts on accident prevention), point that out.

Specify **who is responsible** for implementation of selected measures and when they must be implemented.

Fill in Table 9. You may use the template **##D9##**.

Table 9

Company:

Person in charge:

Job:

Date:

Type of work, work equipment, workplace	Risk factors/ shortcomings/ loads (factor)	Factor related explanations and references	Regulations and working instructions	Measures: Technical, Organizational, Personal	Implementation (who) (when)