

M6-EN.1 INTRODUCTION

M6-EN.1.1 Scope and structure of the training module

M6-EN.1.1 Scope and structure of the training module

Scope of the present module is the training of the employees in a motor vehicle repair workshop on the identification of the main hazards related to their operations and the provision of “Safety Precautions” for the establishment of a safe and healthy work environment.

The module presents the different hazards in the main activities that take place in a motor vehicle repair workshop. At the same time, an effort is made to keep the main categorization of hazards, as follows:

Electrical hazards: Injuries from electrical shocks in garages occur mainly due to poor electrical standards, not appropriate electrical installations, false equipment, weak inspection and maintenance.

Electrical hazards may exist in all sections of a motor vehicle repair workshop and can either result in an even fatal electrical shock of operators, or become source of ignition (spark) leading to fire or explosion.

Mechanical hazards: These are related to the use of mechanical equipment, during operations such as lifting, wheel alignment and balancing, cutting and welding, use of compressed air, etc. The consequences of the mechanical hazards vary from small injuries to fatal accidents. Regular maintenance of the mechanical equipment from competent personnel and use of the equipment from appropriately trained operators minimize the probability of the related risks.

Work in inspection pits is also included within the present category of hazards.

Chemical hazards: These are related to: **(a)** the products being used in a motor vehicle repair workshop, such as paints and thinners, body fillers and hardeners, petrol, used engine oils, cleaning solvents for vehicles' valenting, and **(b)** the chemicals being released during different processes, such as running engines (exhaust fumes), welding, charging of batteries (hydrogen), body filling, paint spraying (isocyanates), brake and clutch lining (asbestos). Exposure to chemical hazards affects the worker's health and may have both short and long-term effects. The installation of effective ventilation systems, the implementation of safety procedures in the handling of chemical hazards and the use of appropriate PPEs reduce the risks from the chemical hazards. In addition to the health effects, the accumulation of vapours emitted from products being used may create explosive atmosphere, while other products, such as petrol and engine oils are flammable. The presence of ignition sources in these cases may lead to explosion and fires. Therefore, special safety precautions need to be taken.

Noise and Vibration: They are both serious health hazards. Noise is a hazard present in most of a motor vehicle's repair workshop sections, while vibration mostly affect operators working in the body repair section. Both, noise and vibration may be reduced with the proper installation, maintenance and use of the equipment.

Electromagnetic Radiation: This is a hazard present during the flame cutting and welding processes

Other hazards: These are hazards related to the general working environment. The working conditions, such as housekeeping, hygiene and welfare, lighting and comfort include all different types of hazards that affect both the safety and health of the workers and need to be assessed.

Explosions and Fire Fighting: Most of the chemicals found in a motor vehicle repair workshop, such as petrol, engine oils, paints, solvents, hydrogen and grinding dusts are at one hand flammable, but at the other hand create an explosive atmosphere due to emitted vapours and dusts. At the same time the existence of ignition sources, such as sparks, static electricity, vehicle's exhaust, require the establishment of both safety procedures against explosions and fire fighting procedures. Therefore a separate chapter is attributed to explosive atmospheres and the key elements of fire fighting procedures that should exist in a workshop.

Given that several activities in a motor vehicle repair workshop include many of the above hazards, special reference is given to specific activities and an effect/hazard-activity matrix is provided. At the end of the module a relatively detailed checklist is included, that is separated into different parts: a) the general one that applies to all activities b) the specific ones adjusted to the main sections found in a motor vehicle repair workshop, meaning the servicing and mechanical repair section, the body repair section (activities: cutting, welding), and the painting section, and c) the one related to the working conditions. This checklist is not exhausted, but it can be used from the employees in order to perform an initial risk assessment of their workplace and to be in position to provide accurate and well-justified feedback to their employers in order corrective actions to be taken. It is essential to point-out that the present module does not get into in-depth analysis of the possible effects of all hazards, since such an analysis is beyond the scope of the current effort and these effects are expected to be managed by qualified safety engineers and not by the workers themselves.