

Removal works of materials containing asbestos

Abstract

Study of risks arising on the removal works of materials containing asbestos. Job safety is a science that aims to promote worker protection in their workplace, with the purpose of reducing accidents and work-related diseases. Health and safety services have the goal of predicting and assessing the risks inherent in a given activity and acting by controlling and preventing accidents and job diseases.

Keywords: asbestos, work diseases, safety

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Introduction

“Success doesn’t happen by accident”

Improvising should be avoided, and legislation has evolved to the point where every intervention carried out requires prior planning. The quality of life at work contributes to an improvement in productivity. The workers are more motivated and achieve better results, benefiting companies and the economy in general. Health and Safety services have the goal of predicting and assessing the risks inherent in a given activity and acting by controlling and preventing accidents and work-related diseases. These services study all components, aspects of the workplace, and all the associated risks and define prevention measures and procedures, as well as the necessary collective and individual protection equipment. The Portuguese Labor Code, in its current state, refers: “The worker has the right to provide work in healthy and safe conditions.” The Legal Framework for the Promotion of Safety and Health at Work, regulates the obligation of a team responsible for its implementation in each company.

The Law regulates the arrangements for repairing accidents at work-related accidents and illnesses, including occupational rehabilitation and reintegration.

Material and methods

Asbestos is a mineral fiber that due to its properties, such as elasticity, mechanical strength, incombustibility, as well as its abundance and low cost of extraction, has had, in the past, numerous applications. In Europe, it was particularly used between 1945 and 1990 in the composition of various building materials such as false ceilings, prefabricated partitions, and fibro cement roofing sheets.

A law was published in Portugal prohibiting the use and marketing of asbestos fibers and products containing such fibers, however, these fibers still exist in previously manufactured or constructed materials.

All activities related to work involving the removal of asbestos-containing materials are considered to be of high risk since they involve exposure to carcinogens. These activities require specific training and corresponding authorization from the Authorities of Working Conditions.

Currently, asbestos is considered an important carcinogenic toxic agent and it has been proven that, after frequent or prolonged exposure, it causes respiratory diseases. The human body is not able to expel the inhaled fibers from the material that is lodged into the lungs.

The Portuguese Law is intended to protect workers against the risks of exposure to asbestos at work. It requires the prior approval

of the work plan and the recognition of the competence to carry out a work of removal of materials containing asbestos.

The work plan shall be accompanied by the following requirements:

- I. Complete identification of the applicant, the developer, the contractor and the contracting entity.
- II. Place, type and amount of manipulated asbestos; the start and expected end of work;
- III. Designation of the workers and technicians involved and their respective medical exams. Training certificates and information of workers and technicians.
- IV. Description of the device relating to the organization of the performing entity’s health and safety activities at work.
- V. Indication of the laboratory responsible for measuring the concentration of asbestos fibers in a specific working environment.
- VI. Indication of the carrier and receiver of the waste. Pre-contracts providing the services during the work.
- VII. List of equipment to be used and conformity certificates. Proof of ownership of equipment or prior rental arrangement. Proof of maintenance and change of equipment filters.
- VIII. Copy of the work plan with the description of the work and of the characteristics of the building, the location plan and photographs. Presentation of the equipment to be used for the work area, and the means for lowering the tiles. It also includes a full Risk Assessment and an updated emergency plan.

It isn’t possible to avoid all risks, so, all workers are obligated to use protective equipment. The protective equipment to be used is determined by the risk assessment, the type of activity and the job in question.

Equipment of collective protection:	Equipment of individual protection:
- Signalization.	- Helmet
- Ventilation.	- Headset
- Formation and information.	- Mask
	- Protective Goggles
	- Gloves
	- Steel toe boots
	- Harness
	- Work suit

The main tasks inherent in the removal of materials containing asbestos (fiber tile) are the following:

- I. The document of approval of the application issued by the Competent Authorities.
- II. Use of personal protective equipment by the workers and technicians involved.
- III. Construction Yard Delimitation/ Signaling and preparatory work.
- IV. Assembly of a safe access to the work place - roof
- V. Monitoring the concentration of asbestos fibers before, during and after the intervention;
- VI. Application of an appropriate liquid on the tiles to prevent the propagation of particles.
- VII. Clip cutting and tile removal using manual or low rotation tools.
- VIII. Descent of plates in fibrocement and placement in pallets.
- IX. Confinement, signaling and mechanical movement of complete pallets to the temporary storage site or definitely to the truck that will transport to the authorized landfill.
- X. Then, cleaning and suction work of the area involved and the equipment.
- XI. In conclusion, workers go to the decontamination unit and remove all personal protective equipment to be decontaminated

Opinion

“Success doesn’t happen by accident”

Improvising should be avoided, and legislation has evolved to the point where every intervention carried out requires prior planning.

The quality of life at work contributes to an improvement on productivity. The workers are more motivated and achieve better results, benefiting companies and the economy in general.

To protect workers against the risks of exposure to asbestos at work requires the prior approval of the work plan and the recognition of the competence to carry out a work of removal of materials containing asbestos.¹⁻¹⁰

Conclusion

In short, to prevent health hazards of asbestos, progressive lung disease and malignant mesothelioma, we have to plan detailed removal works. Is important to discuss advanced technologies for safely removal of asbestos-containing materials from built environment. Also, is very important the safe disposal of removed materials containing asbestos. There are articles that defend it’s now possible to turn asbestos products into non-toxic materials, like glass or porcelain. It isn’t possible to avoid all risks, so, the exposure to

asbestos at work requires the prior approval of the work plan and the recognition of the competence to carry out a work of removal of materials containing asbestos. All workers are obligated to follow the work plan and use protective equipment.



Acknowledgments

Thanks for your attention.

Conflicts of interest

There are no conflicts of interest in this opinion article.

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