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Contributions to the Legislative Provisions Governing the Management of Waste Containing Asbestos in Romania and EU

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Abstract. *One of the most stringent worldwide environmental problems is represented, in this moment, of the waste management. Generate increasing amounts of waste creates problems, ultimately, to the state authorities, their management and recovery technologies becoming an important area of research. Recovery and recycling, whatever their nature, are one of the priority activities for the global economy.*

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Introduction

Identifying alternatives to landfill must be a priority of waste management systems in European countries, in the context of the new waste directive in which waste recycling operations are the main focus. In terms of waste containing asbestos, at the moment recycling is not permitted by law, the Government Decision no. 124/2003, updated, states that "in order to protect human health and the environment, starting from the 1st of January 2007, all commercial and use activities of asbestos and products containing asbestos are prohibited".

The purpose of the research was to scientifically study the issue of asbestos and products containing asbestos, namely to investigate whether the final product resulting from the encapsulation of asbestos waste polymer mass is neutral and stable and whether could be sold without bans. Given favourable results, obtaining polymer matrix composites and the reinforcement of cement grinding elements will also aim to reduce the disadvantages associated with toxic waste disposal and to obtain products with broad industrial application in maximum safety.

Management of waste containing asbestos in Romania

Romania has a significant amount of products and waste containing asbestos, due to the lack of applying any recycling technology (applicable rate of each is actually very low at a global scale, as well, many of the technologies remained an experimental phase).

On the other hand, most often treatment and recycling costs for this category of waste storage exceed those of a reason for reducing the application of those technologies. In the category of the waste that usually is eliminated through landfilling is WEEE polymers waste, the degree of recycling of which is extremely low.

Technologies of recycling and inertization waste containing asbestos

Starting from these premises, namely the need to align Romanian legislation and European regulations regarding the prevention, reduction and control of environmental pollution by asbestos, the author suggests learning to develop a technology of recycling of inert and cement form of polymer matrix composites, useful from a technical standpoint, a stable chemical composition and economically efficient (to withstand commercial competition with other products in the same category or with the same utility); the objectives are:

- reducing the toxic effect of asbestos waste by encapsulation in polymer mass;
- recovering waste from WEEE polymers and other plastic waste as a continuous phase of these composites;
- developing an economic component by replacing the asbestos waste and plastics in the economic cycle;

- contributing to the achievement of fundamental objectives of national waste management strategy that promotes the recovery, recycling and reuse, thereby respecting the basic principles of environmental ethics (reducing pollution by waste, preserving natural resources).

Proposals to modify the legislative provisions governing the management of waste containing asbestos

Following these investigations developed within a doctoral research, the author found that the Romanian legislation, which translates practically the European law, is subject to change.

The study of asbestos waste and polymer was carried out taking into account the current provisions of the law governing the management of asbestos containing waste, Directive no. 87/217/CCE respectively, on preventing and reducing environmental pollution caused by asbestos, transposed into Romanian legislation through Government Decision no. 124/2003, updated, which stipulates that "in order to protect human health and the environment, starting from 1st of January 2007, all commercial and use activities of asbestos and products containing asbestos are prohibited".

The main amendment that should be brought to this legislative document takes into account, according to the author, two operational issues.

The first operational aspect relates to the possible handling, breaking, grinding and shredding the historical products containing asbestos which, when operated, handled and processed without human presence (with robots and mechanized processing line) can be exempted from the provisions of current European Parliament legislation.

The manner in which the operating schemes related to the polybest production and asbestos inertization were conceived precisely in this way, thus eliminating the risk of exposure during the development process.

The second operational aspect relates to the inertization of the raw asbestos, potentially toxic, by its encapsulation in the polymer mass, aspect in which the onset of the process obtaining the composite material – asbestiform fraction is included in the category of hazardous substances, and the final product is inert and safe for human health, as demonstrated in this research tests, certified by the National Institute of Public Health determinations. In this case, asbestos waste must be handled in complete isolation.

Therefore, starting from these experimental results, European legislation could be improved for the purpose of allowing that, in isolation, chrysolite and ambifols could be neutralized by encapsulation in a polymer, and the resulting finished product could be considered:

- neutral;
- stable;
- commercialized without bans.

As a direct consequence of these amendments, encapsulated asbestos within a polymer mass can be economically reused, different products having, finally, the quality of final waste.

Accepting the idea that an economic project, valid in terms of cost-benefit analysis, may be inferior to alternative options, the author argues that in this case outweigh the environmental benefits and technology.

In project analysis the author has considered at least three alternatives:

- initial scenario or alternative of no action;
- alternative of doing the minimum;
- alternative of acting, alternative mostly considered by the author, the draft version of which is to follow a reasonable alternative, a project based on an innovative technological concept.

Finding alternatives to landfill of asbestos, which is currently the only sustainable option in terms of economic aspects, disposal must be a priority for European countries, especially since the central element of the new directive on waste management the recycling operation.

Thus, the author believes that the experimental results reported level regarding the harmlessness of the product obtained after the thermal inertization of asbocement or its embedment into polymer mass could be the starting point for discussions on European legislation that creates the flexibility of general management of waste containing asbestos.

Regarding the Romanian legislation in the field, one can say that the Government Decision no. 124/2003, updated, exceeds the provisions of European directive, introducing elements that ban completely the commercialization or use of asbestos or products containing asbestos, this legislative document being adopted during the transition periods, often described as exaggerated.

Therefore, since this paper has shown that asbestos can be successfully *inertized* by encapsulating it into a polymer mass or thermal treatment, the strict provisions of Government Decision no. 124/2003, updated, cannot be entirely valid.

The author is preparing a set of legislative proposals to determine, at last, the development of a new legislation document text, more flexible, that in conditions of maximum safety, will allow the use of asbestos-based products, if they are certified as inert.

The polybest production paves the way into reusing the products containing asbestos in domestic or industrial applications more complex than those hitherto thought. If the author of this paper considers for the moment recycling products such as snow breaks, exterior fencing blades and road poles, in the future the range of uses will be extended.

Therefore, a new regulation in the area is necessary, research results in this paper constituting, in the author’s opinion, an important base for the final legislative act.

Another legal area that needs to be changed is that of the incentives which the state could give to promote treatment and reuse of its dangerous products on the environment and human health. Taking the example of the successful Rabla program, it is safe to say that the economic benefits are a significant stimulus for the population in adopting some form of recycling.

The applicability of such a program for recycling waste containing asbestos should cover, in author's opinion, two aspects:

- economically stimulating the replacement of asbocement in the existing buildings;
- economically stimulating the companies specialized in recycling asbocement towards the adoption of inertization by encapsulation in a polymer mass or thermal treatment.

All of these, on the other hand, should be complemented by initiating a public awareness campaign on the dangers posed by asbestos containing material kept in buildings, homes and farms.

Another measure that would contribute to a more effective management of asbestos would be launching a line of funding under the Environment Fund Administration to stimulate the expansion of industrial scale recycling processes of waste containing asbestos, as the centralized data provided by authorized institutions (National Environmental Protection Agency) show that hazardous waste deposits in Romania do not have the capacity to receive all the asbocement reported to be on the market.

Even if the capacity to store the waste would be created, disposal sites could become future outbreaks of pollution/disease, while depriving large areas of land for any other use.

It is therefore necessary, as the author considers, a national study that certifies the estimated amount of asbocement in existing buildings, eliminating the time required to estimate this quantity in the market to assess the storage capacity that would be needed, as well as the ways of stimulating the waste collectors to speed up this process or at least maintain a steady and controllable set.

In addition, due to the fact that asbestos encapsulation generates, by using two types of waste, new material, potentially important participant in the supply chain component of the manufacturing industry, given the existence of significant amounts of domestic raw materials, the author considers necessary developing a national capacity building program for processing asbestos waste.

The removal of materials containing asbestos from buildings, housing and households needs the development of a national strategy that should include a set of measures to be met in order to ensure these objectives.

The program associated to the strategy must identify and reflect the measures and actions to be implemented in a certain period, and their supports mechanisms. The program must be developed in conjunction with the main acts mentioned above, so that the state provides support.

The long-term overall objective of the program is to identify the most appropriate measures and actions to ensure the removal of asbestos from the environment, its reintroduction into use and development of industrial-scale technologies to inertize asbestos, the environmental and human health protection being the main corollary.

The specific objectives on short and mid-term, which will contribute to the goal of this program, are considering the increasing of share of asbestos waste and polymer processing industry, the growth of the industry's total production, product and "ecologic pure" technology promotion, energy saving, increased use of local resources, strengthening market mechanisms for resource allocation, reducing the share of materials and raw materials used (plastic and metal), the creation of attractive conditions for foreign and domestic investment in production facilities that process asbestos development of an effective base of local raw materials, etc.

Conclusions

Starting from the fact that Council Directive no. 87/217/EEC (on preventing and reducing environmental pollution with asbestos) was issued on 19th of March 1987, taking into account the elements relating to trends in leading to this regulators framework, the author considers that the timeframe (the maximum number for which predictions are made) is easily exceeded.

The Council Directive no. 87/217/EEC exceptions (e.g. Article 4, paragraph 2) show that each Member State may require application for particular provisions of those involving their conditions of manifestation with compliance framework.

Taking into account Article 9 of the Directive (in order to protect the human health and the environment, a member state may introduce more stringent dispositions than those of this Directive in accordance with the terms of the Treaty), as a consequence, a member state may introduce dispositions that take account of both European legislation and national interest.

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