

Disposal of Asbestos-Containing Waste: Safety Measures Applied To a Real Case

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Extended Abstract

Until the 90s, Italy was among the world's leading producers of asbestos and asbestos-containing materials (ACM), and it was also one of the most contaminated countries in Europe. To reduce the effects of asbestos on health, Italy has adopted numerous laws and regulations regarding exposure thresholds, limits and remediation tools.

This material has been used in many activities, especially in construction; in fact, it is estimated that there are still 8 million cubic meters of asbestos on the national territory and from the mapping of asbestos in Italy [3], carried out by the Ministry of the Environment, there are 155,000 sites with the presence of ACM.

Currently, asbestos containing waste (ACW) is delivered to landfills for hazardous waste or to landfills for non-hazardous waste with a dedicated cells; while the former dispose both friable and compact ACW, the latter accepts only compact ACW.

The latest census in Italy (2022), states that the national production of ACW has been about 250,000 tons, mostly consisting of construction material (93.6% of the total produced) - EER 17.06.05*. The region that produced the largest amount of asbestos waste is Lombardy with over 70,000 tons (29% of the national total), of which about 9% of this waste is construction materials containing asbestos (EER 17.06.05*) [2]. There are 17 active landfills that dispose of asbestos-containing waste; 13 are classified as landfills for no hazardous waste and 4 for hazardous waste. In northern Italy are located 7 plants (5 for non-hazardous waste and 2 for hazardous waste), in central Italy 3 plants (all for non-hazardous waste), and in southern Italy 7 plants (5 for non-hazardous waste and 2 for hazardous waste). They are insufficient for the disposal of ACW produced, which is consequently partly transferred to abroad. It is therefore, of priority importance to identify new disposal sites that have at the same time high safety standards.

The aim of this work was to develop suitable safety measures for the construction in Lombardy of a new plant for non-hazardous waste with dedicated cells for the disposal of ACW in compact matrix. The definition of these prevention and protection measures for the health and safety of workers and living environments is fully part of the objectives of INAIL research.

The safety indications studied for the specific case of Lombardy, described in this work, may be an important reference for similar situations on a European or international scale, considering the large amount of ACW to be disposed of worldwide and the need to create and manage new plants with more precautionary and economically sustainable safety criteria [1].

References

- [1] F. Paglietti, P. De Simone., Malinconico S., Bellagamba S., “Casale Monferrato remediation: asbestos pollution and safety measures to protect workers and environment” MATTER: International Journal of Science and Technology Volume 10 (July 2024), pag.27-39, ISSN 2454-5880, <https://doi.org/10.20319/mijst.2024.10.2739>, Open Access.
- [2] ISPRA “Report on Waste from Economic Activities” – Reports 402/2024
- [3] F. Paglietti, S. Malinconico, B. Conestabile della Staffa, S. Bellagamba & P. De Simone, “Asbestos products and wastes: new classification system developed”, Science for Environment Policy, Issue 465, 29 July 2016.