# IN SITU STABILIZATION AND RECYCLING

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# What is in situ stabilization/recycling, and why is it worthwhile?

Stabilization is an innovative and efficient solution for improving foundation soils that cannot be considered suitable for the safe and comfortable operation of a construction, as well as aggregates that cannot provide the necessary load-bearing capacity.

This process uses hydraulic road binders in powder form, based on lime or cement, selected according to the nature of the soils or aggregates and the desired results.

A preliminary and essential step for stabilization is on-site expertise and laboratory testing to establish the optimal formula based on each site's specifics.

Stabilization is a sustainable and innovative recycling method in construction.

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# What is in situ stabilization/recycling, and why is it worthwhile?

By adding hydraulic binders, which enhance the load-bearing capacity of soils or aggregates, the resources already on-site can be used sustainably without compromising the durability of the construction.

This approach prevents construction waste and eliminates extra expenses for disposing of unsuitable material and purchasing new material. Consequently, transportation, storage, implementation, and disposal costs are reduced.

Using hydraulic binders also creates a degree of impermeability in the stabilized layer, allowing construction work to continue during rainy or cold weather, resulting in increased productivity during the colder season.

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# What is in situ stabilization/recycling - case study?

There are cases where a structure is so deteriorated that demolition is necessary.

All resulting material can be reused. It is crushed, sorted, and repurposed for the new construction, yielding remarkable results both financially and in terms of execution time.

The dismantled material is not used alone in this technological process; other materials are added to enhance its properties.

In construction, it is essential to maximize the use of on-site resources, transforming them into new materials that are needed.

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# Digitalisation and modern technologies used for in situ stabilization/recycling

Thanks to digitalisation, stabilization is a fast and precise operation. We use ATS guidance equipment on all machines we work with.

The 3D machine control system has an accuracy of ± 5 mm and is designed to work according to the project specifications, covering an area once without the need for rework or additional measurements. This increases productivity by up to 30%.

Technology enables machines to be precisely positioned on-site, allowing us to collect, manage, and analyse real-time site information, providing accurate data on the project's progress to improve its quality.

A machine equipped with an automated guidance system consumes less fuel than one without this type of equipment and requires less personnel.

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# Where we have applied our expertise

Military Bases:
+ Otopeni Air Transport Base 90
+ Mihail Kogălniceanu Air Base 57
+ Fetești Air Base 86

Major Road Infrastructure:
+ Motorways A1, A3, A4, A7, A10
+ Bucharest Ring Road
+ Bacău Ring Road
+ Craiova – Pitești Expressway (where we completed 1 million m² of stabilized foundation soil in 10 working days)

Civil Airports:
+ Oradea International Airport
+ Iași International Airport
+ "George Enescu" Bacău International Airport
+ Chișinău International Airport (Republic of Moldova)

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# Where we have applied our expertise

Logistics and Commercial Spaces:
+ External and internal infrastructure in numerous locations across Romania and Hungary.

General Contracting for Retail Stores:
+ Dedeman Blejoi (Ploiești)
+ Dedeman Câmpulung Moldovenesc
+ Dedeman Logistic Pantelimon No. 1
+ Dedeman Bârlad
+ Dedeman Logistic Techirghiol No. 2
+ Dedeman Craiova No. 2
+ Dedeman Petroșani
+ Dedeman Arad
+ Dedeman Pașcani
+ Dedeman Logistic Pantelimon No. 2

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# More ecological can mean more economical

The construction industry generates over 13 billion tons of carbon emissions globally each year and significantly contributes to the climate crisis. In Europe, the latest statistics show that 54% of waste and air pollution come from construction activities.

In Romania, construction waste represents 40% of the total waste generated annually in the country.

This waste comes from decommissioned constructions, abandoned buildings, demolitions, intensive transportation, noise pollution, etc.

That’s why it’s essential not to replace a material that can be reused with today’s technology and that can meet all operational and stability requirements throughout the life of the construction.

Mithras Build provides sustainable solutions that meet high quality standards, with short execution times and optimal economic efficiency.

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# Mithras Build and in situ stabilization/recycling

production capacity:
**over 190.000 m²/day**

National leaders in cold recycling, ballast and soil stabilization, with a low environmental impact.

We operate 20 complete in situ stabilization/recycling lines.

The largest fleet of specialised equipment in Europe.

The largest soil stabilization capacity in the European Union.

Road structure design and sizing carried out in collaboration with our partners LaFarge Holcim and CRH.

Laboratory testing.

Extended warranty for completed works.

Over 12 years of industry experience.

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# About Mithras Build

We are a company with 100% Romanian capital, founded in 2010, currently employing over 450 people, including more than 300 highly skilled workers.

The company began with in situ stabilization/recycling works, then expanded its expertise in construction to include infrastructure and earthworks; engineering in the construction of logistics spaces, commercial spaces, production units, as well as wind and photovoltaic parks.

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