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Nedmag MgCl₂ TECH

ECO Dust Control & Soil Stabilization

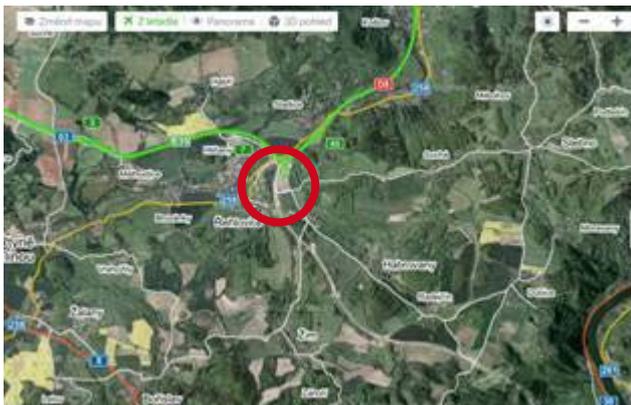
Technical report

Dust Control and Soil Stabilization (Nedmag MgCl₂ TECH)

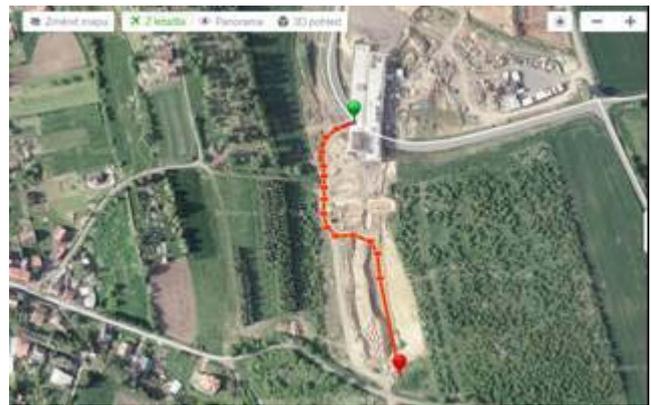
The subject of this technical report is the description of the existing dust control issues and evaluation of the application of Nedmag MgCl₂ TECH liquid product. The purpose of this test was to control heavy amounts of dust and providing soil stabilization on an unpaved surface. The main issue and concern at the construction site was the fugitive dust.

Location:

Construction company Eurovia CS, a.s. had chosen this specific trial section for application of the Nedmag MgCl₂ TECH on an extension construction project of the major highway D8 near the village of Rehlovice Czech Republic. This location was selected because of serious dust issues being created by very frequent and heavy traffic on unpaved construction surfaces.



Obr. 1a: General overview on location



Obr. 1b: Trial section treated with Nedmag

The trial section as shown above was located at the entrance of the construction site in Rehlovice from the road III/25832 continuing on the unpaved construction road going along the highway construction then entering the future highway body and continuing on the highway surface in total length approx. 350 m and width approx. 4 – 4.5 m.

The first part of the trial section from the road III/25832 to the beginning of the highway construction is a considerable slope with a height difference of 12 m and 100 m in length.

The second part of the trial section includes two directional curves before the entry to the body of the highway and on the body of the highway, which both are the most critical parts of the trial section due to the excessive release of fine particles and dust formation. The 4-axle trucks created huge amounts of dust due to the surface shearing of the rear wheels.

The last part of the trial section is on the body of the highway which slopes up slightly until the end of the treated trial section.



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Photo Gallery:

These photos taken prior to application illustrate the serious dust issues being created by very frequent and heavy traffic on this construction test site.





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Photo Gallery:

Of the application of Nedmag $MgCl_2$ was conducted on the 7th of June between 4 pm. and 4 45 pm. which means after working hours. The total length of the unpaved surface trial section was 350 m, width 4 – 4.5 m approx. 1500m². The application rate was 2 l/m² and the water truck with rear top nozzles was used. The trucks entered the treated trial section on the morning of the 8th of June. Soil stability and dust control issues were observed during a 2 week test period following only this one application.





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Photo Gallery:

The surface 2 weeks after the application with very high frequency of continuous heavy truck traffic. Video coverage of the entire test is available upon request.





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Findings/Results and Summary:

The application of Nedmag MgCl₂ TECH as described in this report used in the completion of the D8 highway near the village of Řehlovice clearly demonstrated the strong, clearly effective long-term reduction of dust and the soil stabilization of the unpaved surfaces.

The first 7 days after application was warm and dry and it was very easy to see the difference between the treated and untreated surfaces. Since the second day after the application it was possible to visually recognize the treated and untreated surfaces and the overall structure was very different. Where our application was performed there was fine particles bonded to larger particles and the entire surface was stabilized to a depth of 2-3 cm. Thanks to this we created a solid elastic surface layer, which due to the effect of our product it kept a consistently higher content of moisture and humidity. This end result is critical for the absorption of dust particles brought along by the wind, on the vehicles from other parts of the construction site.

The treated trial section was dust free for the entire period of the test. Heavy traffic with high intensity, any operation on the construction site or changing weather did not damaged the treated surface nor affected its parameters. There were a lot of heavy rain falls during the second week of the test and no damage or erosion of the surface were observed. The surface remained very consistent, firm and compacted.

It was clearly demonstrated that Nedmag MgCl₂ TECH is a highly effective product for soil stabilization and for the reduction of dust on unpaved surfaces..

The comparison of cost effectiveness between using Nedmag MgCl₂ TECH and the spraying application of water does not make economic or operational sense. Using valuable water resources is also a waste due to how ineffective it is for dust control and soil stabilization applications. The end results of spraying unpaved surfaces with water provides very limited and a very short term solution to a long term problem. It is impossible to achieve the same or even similar results when using Nedmag MgCl₂ TECH compared to water in achieving long term soil stabilization and dust control.





Nedmag MgCl₂ TECH is a high performance dust control and soil stabilization liquid product. It is designed for dust suppression and to extend the life of your gravel roads and surfaces. Composed of all natural magnesium chloride (MgCl₂), Nedmag MgCl₂ TECH works by binding fine dust and aggregate particles to keep surfaces stable and dust free.

Dust control is crucial in maintaining the safety, utility, and integrity of unpaved surfaces such as roads, parking lots, recreational surfaces, landfills, quarries, farms, etc.

- ➔ Dirt and Unpaved Surfaces
- ➔ Gravel Roads and Driveways
- ➔ Parking Lots
- ➔ Construction Sites
- ➔ Mining Operations / Land Fills
- ➔ Tennis Courts / Horse Arenas
- ➔ Race Tracks / Speedways
- ➔ Recreational Surfaces
- ➔ Military Installations



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Features and Benefits:

The hygroscopic properties of magnesium chloride keep the ground moist/damp providing maximum control of dust and dirt.

- » Nedmag MgCl₂ TECH attracts moisture from the air and its surroundings, keeping unpaved surfaces damp, reducing dust.
- » Nedmag MgCl₂ TECH binds the dust, preserving road stability and extending road life.
- » Nedmag MgCl₂ TECH requires no pre-wetting, simplifying application, reducing cost and providing surfaces with faster protection.

Nedmag MgCl₂ TECH is designed to:

- + Create safer road conditions by increasing driver visibility.
- + Promote healthier air quality for people, pets and plants by protecting against the health threats of fugitive dust which can aggravate respiratory problems.
- + Reduce costly soil erosion and loss of aggregate resulting in longer lasting, safer roads and surfaces.
- + Prevent fugitive dust from washing off into streams, creeks and lakes improving water quality.

Application:

Application rates vary based on soil type and traffic volume; typical application rates range from 1.0 to 2.5 liters per square meter.



Follow up applications rates are applied at **half the initial dosage.**

General Properties and Guidelines:

Appearance	Clear amber
% MgCl ₂ (w/w)	min. 30%
Density	1290 – 1330 kg / m ³
pH	4 – 6

Safe to handle, Nedmag MgCl₂ TECH will not cause burning or stinging and is free of toxic metals and substances. Nedmag MgCl₂ TECH is mildly corrosive to steel and aluminium. Preferred materials for storage and handling equipment are polypropylene, polyethylene and polyester.



Nedmag MgCl₂ TECH magnesium chloride is safe for the environment. This naturally occurring product is approved in a number of EU countries for all farming uses including organic farming and feed for animals.



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