Groupe d'Ingénierie et de Développement pour l'Afrique
Grupo de Engenharia e Desenvolvimento para África
Grupo de Ingeniería y Desarrollo para África
Engineering and Development Group for Africa

GIDA

offers:

Soil consolidation technology for the rapid and sustainable development of heavy-duty track, road and motorway infrastructure.

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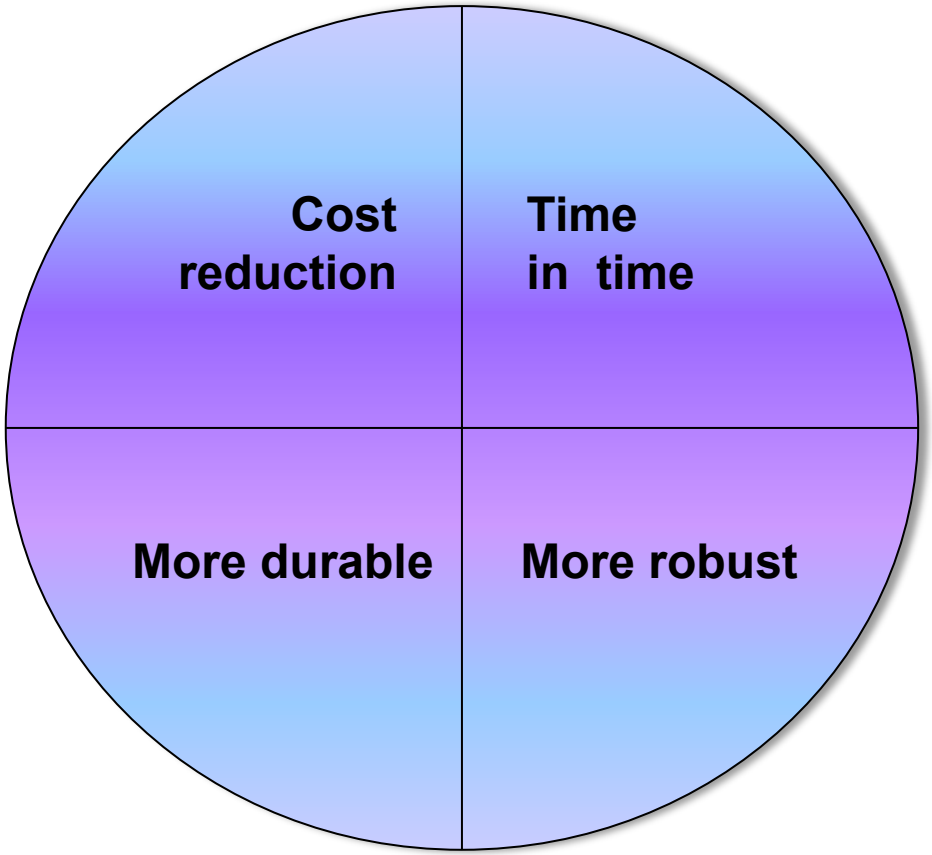
An innovative soil stabilisation method with proven, convincing results.



Our technology: Special binder for the rapid and durable solidification of soils – environmentally friendly

Our technology
- a special binder -

Quickly and safely transforms virtually all soils found on construction sites (from sand to clay) into an extremely stable foundation layer

COMPOSITION:

Our technology consists of complex alkali and alkaline earth elements, 100% natural in origin, free from polymers and harmful substances. It is a mineral powder.

FUNCTION:

When mixed with cement, this mineral powder neutralises the acids present in the soil and promotes the cement hydration process, thereby creating longer crystals.

RESULT:

Without replacing them, virtually all soils or foundation surfaces on site can be consolidated to form a base layer, whether they consist of sand, silt, clay, or even partially damp, saline, organic soils, and even oil sands.

+ very robust (generally >=150 MN/m² according to the dynamic plate method)
+ high durability
+ resistant to water, salt and acid

ENVIRONMENT:

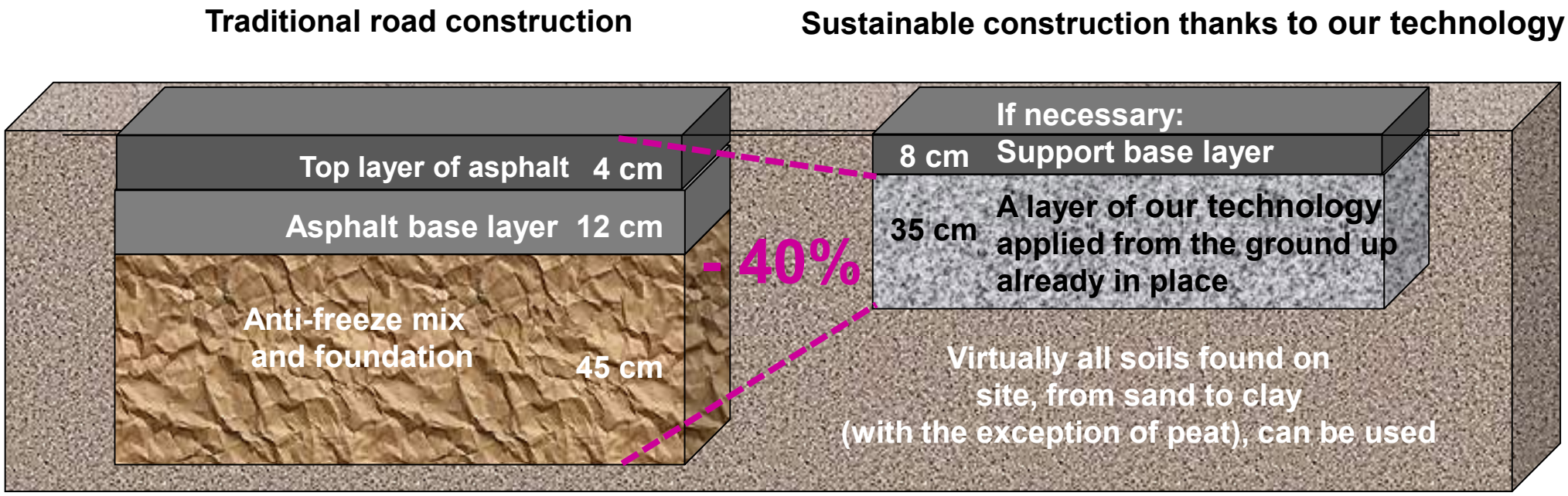
Our technology is sustainable and poses absolutely no risk to the environment, groundwater, etc.

Our technology:

The areas of application are as varied as the benefits.

Roads and motorways, runways, tunnels, sewer networks			Roads and tracks
Ports and quays			Stabilisation of dykes
Parking and storage areas			Reinforcement of embankments and dams, reinforcement of road verges
Landfills			Container storage, logistics centres
Base layer for hangar floors, foundations in general			Biogas plants

Our technology reduces the number of layers required by more than 40% compared to traditional road construction technology

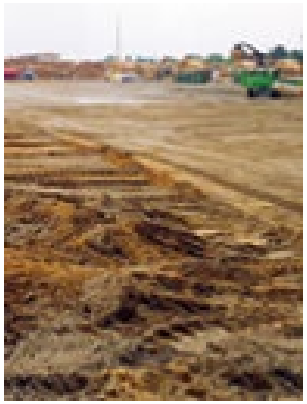


Possible reductions:

- 5,300 m³ less material to be removed
- 4,500 m³ less frost protection against frost and base course
- 4,000 m³ less for soil stabilisation
- 50% less asphalting work
- up to 70% less construction time
- Significant reduction in to the environment

(scenario: 10,000 m³ of compacted soil)

This process — combined with the equipment — is key to reducing costs and saving time

Surface preparation surfaces	Application of our technology.	Mixing the stabiliser with the soil	Watering of the surface	Compaction	Inspection of the quality
					
- Transport of materials safely - Reduction in amount of water (if necessary) - Prior levelling - Removal of obstacles - Marking of the location - Underground safe.	- Specification of cement mix + our technology depending on the soil - Cement mix with the proportion of our technology. - Spreading using a spreader.	- Mixing of cement + our technology and soil using a cold mixer via milling and mixing by embankment (depth > 50 cm) - Depth and quantity of the mixture depending on the load.	- Irrigation of the base layer during mixing to prevent evaporation.	- Precise levelling of the surface - Compaction with on average 100% DPR - Subsequent profiling using a grader (laser control, if if necessary).	- Geotechnicaltesting: static slab test slab (DIN 18134), dynamic tests and falling weight equipment - Repair of drill holes.

Materials and equipment:
Main equipment required

(Required cement grade: Portland cement CEM II/B-L 32.5N)

Cold recycler (soil stabiliser) and water tank

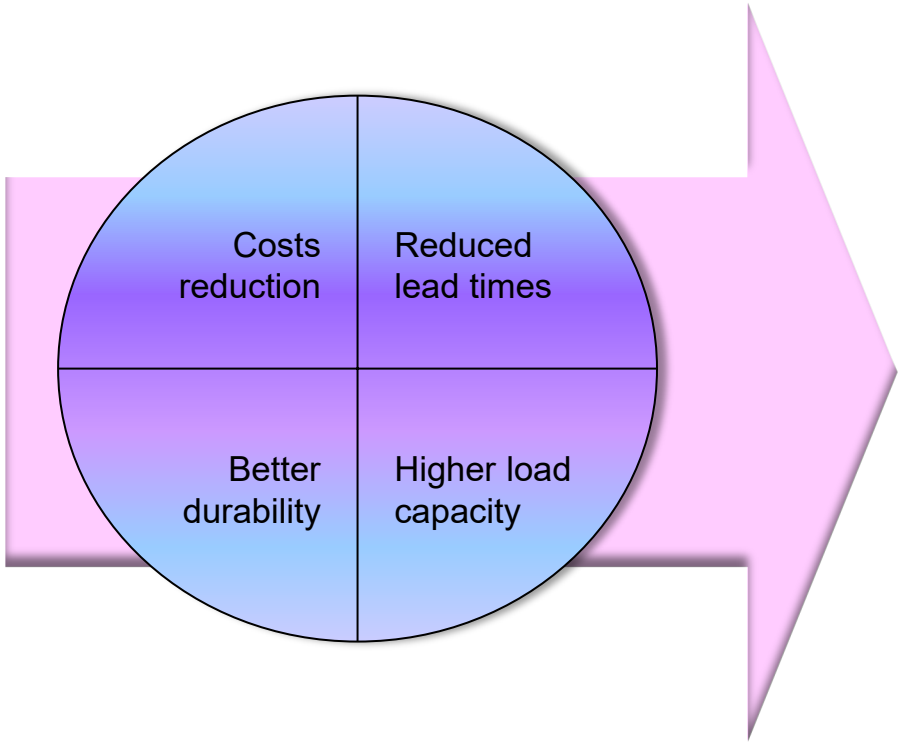
Cement spreader + our technology (mineral powder)

Bulldozer

Grader

Roller

Our technology:
a compelling process
for the sustainable improvement of infrastructure

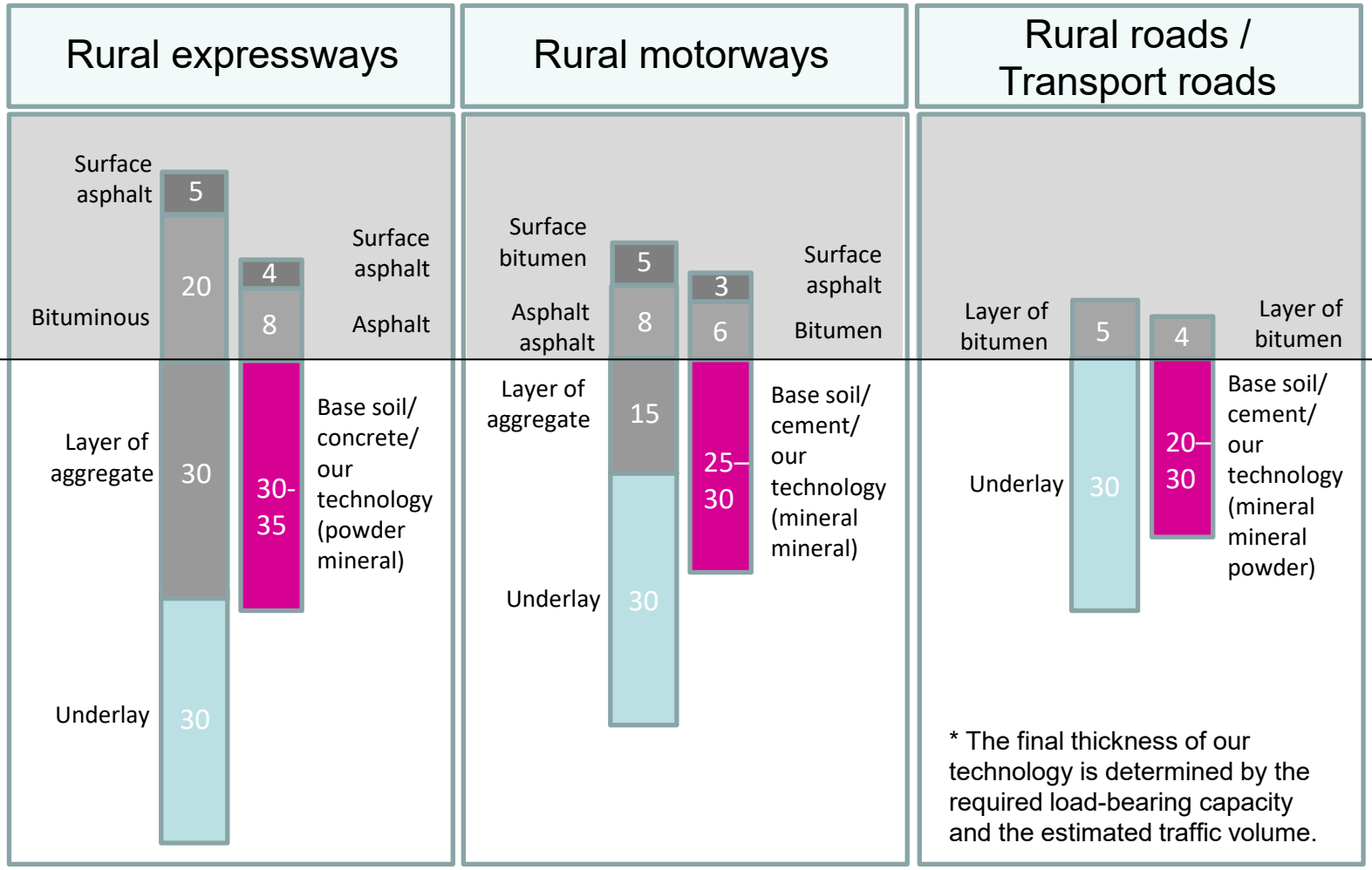


- **Extremely short construction time**
- **Reduced volume of top layers and shorter setting times**
- **Highly resistant and robust, very durable**
- **Waterproof surfaces, free from cracks and settlement.**
- **Resistant to acid and salt**
- **Fully recyclable, if necessary**
- **Reduced repair and maintenance costs**

Comparison of typical thicknesses per construction layer traditional method vs. our technology (mineral powder) by way of illustration

Bituminous base course and wearing course

A simple comparison between traditional road construction (left-hand column) and our technology's system (right-hand column)



Dimensions in cm

Global references: projects completed using our technology in all climatic and geological conditions

DaimlerChrysler Test Track Laredo, Texas, United States

Objective: Resurfacing of a lane and installation of a base course using our technology.

Area: approx. 10,000 m²

Date: May 2004

Duration of works: 2 weeks

Milling depth: 25 cm

Concrete: 160 kg/m³

Timber terminal for Klenk, Baruth, near Berlin

Objective: Creation of a base using our ST technology and an anti-freeze layer for transport and storage, designed for heavy goods vehicles (axle load: 100 tonnes).

Area: 80,000 m² in total

Date: 2003, 2005 and 2006

Time required: 2 weeks per operation

Milling depth: 30 cm

Concrete: 170 kg/m³

Construction of a BMW dealership in Dortmund

Objective: Preservation of the pile foundations in the area designated for the construction of the new building and conversion of the existing fill into a base course.

Area: approx. 5,000 m²

Date: September 2002

Duration of works: 1 week

Milling depth: 80 cm (sandwich method)

Concrete: 180 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Construction of a warehouse in Beek en Donk, Netherlands

Objective: Shallow foundation for the construction of a warehouse without individual foundations or continuous footings. Integration of structural elements directly into the sub-base using our technology.

Area: 2,500 m²

Date: December 2001

Duration of works: 2 days

Milling depth: up to 70 cm

Concrete: 220 kg/m³

Renovation of forest tracks in Babimost, Poland

Objective: Creation of an ST base using our technology and an anti-freeze layer for forest roads used by timber transport lorries.

Area: approx. 25,000 m² in total

Date: June 2004

Duration of works: 2 weeks

Milling depth: 25 cm

Concrete: 160 kg/m³

Renovation of a district road in Unterlunkhofen, Switzerland

Objective: Rehabilitation of an access road, which would have taken 8 weeks using traditional construction techniques (road completely closed at certain times).

Area: approx. 7,500 m²

Date: December 2006

Duration of works: Milling 2 days, road resurfacing 4 weeks

Milling depth: 25 cm

Concrete: 190 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Cycle paths in Gemert-Bakel, Netherlands

Objective: Creation of a base using our technology and an anti-freeze layer for cycle path areas. Constructed using near-natural surfaces, without an additional layer of asphalt.

Area: 22,000 m² in total

Date: 2003

Duration of works: 1 week

Milling depth: 25 cm

Concrete: 170 kg/m³

Straw bale warehouse in Bünzwangen, Germany

Objective: Creation of a base using our technology and an anti-freeze layer with the distinctive feature of being acid-resistant.

Area: 2,500 m² in total

Date: 2000

Duration of works: 1 day

Milling depth: 30 cm

Concrete: 180 kg/m³

Container storage in Markgröningen, Germany

Objective: Creation of a base using our dual surface treatment technology (gravel + bitumen) to withstand the high pressure resulting from container storage.

Area: approx. 7,500 m²

Date: 2003

Duration of works: 1 week

Milling depth: 35 cm

Concrete: 180 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Construction of a production hall for VW in Kaluga, Russia

Objective: To construct a foundation and an anti-freeze layer using our technology, for the construction of a production hall.

Area: 1,000 m²

Date: October 2006

Duration of works: 1 day

Milling depth: 40 cm

Concrete: 180 kg/m³

Transport company in Ostfildern-Scharnhausen, Germany

Objective: Construction of a foundation and a frost-proof layer for the building, the factory floor and the traffic routes of a transport company.

Area: 10,000 m²

Date: December 2000

Duration of works: 2 weeks

Milling depth: 100 cm (in 3 stages)

Concrete: 150 kg/m³

Construction of a warehouse in Radolfzell, Germany

Objective: Creation of a foundation and a frost-proof layer for the construction of a warehouse using our technology.

Area: 1,200 m²

Date: September 2004

Duration of works: 1 day

Milling depth: 50 cm

Concrete: 190 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Construction of port facilities in Malabo, Equatorial Guinea

Objective: Construction of a foundation layer using our technology for the construction of a quay for container traffic.

Area: 40,000 m²

Date: March 2007

Duration of works: 4 weeks

Milling depth: 40 cm

Concrete: 180 kg/m³

Road rehabilitation using the 'Mixed-in-Plant' process in Salzwedel, Germany

Objective: Creation of a base and frost-proof layer for the laying of natural stone, using the "Mixed-in-Plant" process.

Area: 20,000 m²

Date: 2002 and 2003

Duration of works: 4 weeks

Mixed-in-Plant, milling depth: 30 cm

Concrete: 150 kg/m³

Construction of a logistics centre in Wrocław, Poland

Objective: Creation of a base and frost-proof layer for the construction of dispatch halls and traffic areas for a logistics centre.

Area: 22,000 m²

Date: December 2005

Duration of works: 2 weeks

Milling depth: 25 cm

Concrete: 160 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Repair of a farm track in Jalan Pekoti Timur, Malaysia

Objective: Rehabilitation of a farm track with a near-natural surface, passing through a palm grove and used by heavy vehicles.

Length: 11 km

Date: August 2006

Duration of works: 6 weeks

Milling depth: 30 cm

Concrete: 180 kg/m³

Farmyard and farm track in Baar ZG, Switzerland

Objective: Creation of a base and frost-proof layer for the renovation of a road with a near-natural surface, used by agricultural vehicles.

Area: 1,456 m²

Date: September 2006

Duration of works: 3 days

Milling depth: 30 cm

Concrete: 180 kg/m³

Widening of the K 418 district road in Birmenstorf, Switzerland

Objective: Construction of a base course and a frost-proof layer for the widening of a district road.

Area: 620 m

Date: August 2006

Duration of works: 2 days

Milling depth: 30 cm

Concrete: 180 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Extension of the K348 bus route Alikon – Abtwil, Switzerland

Objective: Construction of a sub-base and frost-proof layer for the widening of the district road.

Area: 200 m

Date: August 2006

Duration of works: 1 day

Milling depth: 30 cm

Concrete: 180 kg/m³

Widening of the K 286 district road in Tegerfelden, Switzerland

Objective: Construction of a base course and a frost-proof layer for the widening of the district road.

Area: 635 m

Date: September 2006

Duration of works: 1 day

Milling depth: 30 cm

Concrete: 180 kg/m³

Reinforcement of the K292 district road in Rheinfelden, Switzerland

Objective: Creation of a base and frost-proof layer for the consolidation of a district road.

Area: 990 m

Date: May 2006

Duration of works: 2 days

Milling depth: 30 cm

Concrete: 180 kg/m³

Global references: projects completed using our technology in all climatic and geological conditions

Road project in Malaysia:
The Malaysian government compared five different road construction methods: four roads built using were damaged within a short time. Our technology made the difference – the contract was awarded.

Offering you innovative and effective solutions.

Thank you for your attention and for your interest in this soil stabilisation solution. We offer a wide range of other technologies, all of which are sustainable, cost-effective and environmentally friendly.

GIDA operates across the entire African continent.

GIDA has all the necessary equipment and logistical capabilities to successfully deliver your infrastructure projects, including roads, motorways, railways, airports, ports, industrial surfaces and pavements, as well as mining waste (tailings).

We are highly responsive and our operating principle is simple: “we do not leave the site until we have resolved your problem”.
Our demanding clients can confirm this.

Our greatest pride is being committed players in the development of African territories, in the interests of nations and their people. We are at your service.

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