



Proviacal® ST, RD and DD:
solutions for advanced soil treatment





Proviacal®

Proviacal® is a dedicated brand for advanced soil treatment. Designed to meet the rigorous demands of civil engineering projects, Proviacal® helps you achieve excellent results enhancing cost efficiency, meeting project deadlines, and supporting circular construction practices.

Our premium-quality lime and engineered blends are specifically developed to improve the workability and mechanical performance of a wide range of soil types, ensuring reliable and durable improvement.

Whether you're building roads, railways, platforms, or dikes, Proviacal® is your go-to solution for soil treatment.



Backed by decades of experience and innovation, Lhoist has developed a unique expertise and offer for soil treatment across a range of civil engineering applications.

Your challenges, our solution

Facing tough soil conditions on your construction site?

Civil engineering projects frequently encounter unpredictable and challenging soil conditions. High moisture content, variable soil plasticity, environmental constraints, and the risk of soil movement add uncertainty to your operations. These factors can slow progress, increase costs, and complicate logistics making reliable solutions essential.

Your challenges

Poor workability: clay-rich soils and excess moisture can make your earthworks difficult to manage. These conditions often lead to delays, increased labour, and the need for additional equipment just to get started.

Project delays: excessively wet soils make jobsite traffic difficult. Inaccessible work areas and delayed operations may quickly lead to increased costs and disrupt project schedules.

Structural risks: high-plasticity soils swell when wet and shrink when dry, creating instability that can compromise the integrity of your structures over time.

Environmental constraints: the disposal of excavated soil and the extraction of new materials is becoming increasingly restricted. These practices not only affect your budget but also raise environmental and compliance concerns.

Community impact: frequent transport of materials during construction can strain relations with nearby communities. Noise, traffic, and dust may lead to complaints and reputational risks.

Our solution

Projects on tracks: if wet soil threatens to slow down your construction schedule, Proviacal® ST is a more reliable choice than any other alternative. By rapidly consuming excess moisture, it dries the ground quickly, allowing work to continue without interruption.

Easy to handle: beyond drying, Proviacal® ST improves soil compaction and significantly boosts bearing capacity, making it easier and safer for heavy vehicles to access the site.

Enhanced resistance: Proviacal® ST excels in long-term stability and durability by reducing swelling and shrinkage, enhancing mechanical strength, and increasing resistance to water and frost. As a result, it effectively preserves soil integrity for decades.

Cost-effective and reliable: by eliminating the need for costly soil replacement and keeping your project on track, Proviacal® ST contributes to substantial savings. Its proven track record has made it a trusted choice in major infrastructure projects.

More sustainable practices: Proviacal® ST lowers the need for soil transport and disposal. It can decrease jobsite traffic on local roads by more than 50 times, which minimizes disruptions to surrounding communities and supports construction practices that are more sustainable and circular.



Transforming challenging soils into solid opportunities, our solutions draw on proven expertise and tailored support to help you build better.

Our solutions

At Lhoist, we understand the challenge variable soil conditions can have on your projects: unexpected delays, rising costs, and operational uncertainty. That is why we have developed Proviacal®, a range of high-performance lime solutions designed to improve soil workability, stability, and circularity. Whether in standard or sensitive environments, our products keep your projects on schedule, lower environmental impact, and deliver lasting improvements in soil performance.

Proviacal® ST

Technical characteristics:

Proviacal® ST is a high-performance lime product designed for the treatment of soil in civil engineering applications, including roads, railways, and industrial and commercial platforms. Treatment can be done either in-place or at a mixing plant.

Proviacal® ST is a quicklime and classified according to EN 459-1.

Functional performance:

Proviacal® ST immediately reduces water content of wet soils by hydration and evaporation. Through its action on the intrinsic characteristics of the materials, Proviacal® ST provides an instant improvement in the bearing capacity of treated layers, which continues with a progressive increase in mechanical performance.

Improved workability:

- Reduces soil moisture by approximately 1% per 1% of product added and up to 5% under optimal conditions (wind and thorough mixing).
- Lowers soil plasticity, enhances compaction, and significantly increases bearing capacity, enabling safe site access and traffic.

Enhanced stability:

- Boosts mechanical strength and long-term resistance to water and frost.
- Minimizes swelling and shrinkage, while increasing soil cohesion for lasting structural integrity.
- Favorably improves water insensitivity.

Proviacal® range of products

For every application, Lhoist delivers tailored solutions through its Proviacal® brand:

- Proviacal® DD** Enhanced hydraulic performance for hydraulic works
- Proviacal® ST** Soil treatment for cost-efficient and timely earthworks operations
- Proviacal® RD** Reduced dust emission for application in sensitive zones
- Proviacal® DS** Valorization and recycling of materials from excavation or quarries



Proviacal® RD

Proviacal® RD is a premium lime solution designed for soil treatment in sensitive environments such as urban areas or natural reserves. Its advanced formulation minimizes dust emissions while delivering uncompromised performance. No extra or specialized equipment is needed.

Technical characteristics:

Proviacal® RD classifies as CL 90-Q according to EN 459-1, with CaO available $\geq 80\%$.

Functional performance:

Proviacal® RD delivers the same high-performance soil treatment and technical benefits as Proviacal® ST, while minimizing wind-related product loss.

Reduced dust:

- Wind-related product loss decreased by up to 90%.
- Designed for uninterrupted progress, even when winds pick up.
- Confidence in protecting operators, residents, equipment, and surroundings.

Proviacal® DD

Proviacal® DD, is a high-performance lime-based solution primarily intended for hydraulic structures. Engineered to enhance structural resilience, it also presents an advanced approach to strengthen transport and hydraulic/defence infrastructure against floods or heavy rain. This helps mitigate the significant societal costs caused by extreme weather events.

Technical characteristics:

Proviacal® DD classifies as CL 90-Q according to EN 459-1, with CaO available $\geq 88\%$.

Functional performance:

Proviacal® DD acts on the intrinsic properties of treated soils, delivering immediate and long-term improvements in bearing capacity, stability, and erosion resistance.

Superior erosion resistance:

- Raises critical shear stress thresholds, erosion occurs only under significantly higher loads.
- Slows erosion progression and reduces vulnerability to animal burrowing, extending the lifespan of treated structures.
- Favorably improves water insensitivity.

Want to learn more? Check out our Proviacal® DD brochure.

Discover how Proviacal® can support your construction needs with reliable, efficient, and environmentally conscious soil treatment.

International expertise at your service

With decades of experience in lime-based solutions across diverse geographies and soil types, Lhoist brings international expertise directly to your project site. Our technical teams work closely with you to evaluate the most effective way to treat local soils using Proviacal[®], ensuring optimal performance and long-term durability.

We also offer technical assistance to help you assess and optimize soil performance, including:

- granulometry, Atterberg limits, and Methylene Blue Value
- lime fixation point
- proctor curves for both natural and treated soils
- bearing capacity determination
- compressive strength evolution
- volume stability analysis

We focus on giving your project the technical strength it needs while helping you unlock the complete potential of Proviacal[®] ST/RD.

Partner with us to leverage our global expertise and dedicated local support, ensuring your soil performs at its best with Proviacal[®].





Success stories

Belgium

- High-speed railway along E40 and E19 motorways

The Netherlands

- A50 motorway in Eindhoven

Germany

- A-Nord power line corridor between Emden and Osterath.

France

- Paris-Charles de Gaulle airport runways, aprons and terminal.
- Canal Seine-Nord Europe connecting Compiègne in the Oise to Aubencheul-au-Bac in the North of France.
- More than 2500km of high-speed railway and 10 000km of motorways in France.

Spain

- High-speed railway between Castejón and Comarca de Pamplona

Portugal

- High-speed railway between Porto and Lisbon

Denmark

- High-speed railway Vestfyn Line on the island of Funen, between Odense and Kauslunde
- Fehmarnbelt Tunnel connecting Rødbyhavn with Puttgarden in Germany

Czech Republic

- Prague ring road D0

Poland

- S19 Rzeszów-Babica motorway and tunnel, S17 Koźbiel and S61 Suwałki - Budzisko motorways
- Modernization of railwayline LK96 between Tarnów and Stróże

United Kingdom

- Heathrow airport runways, taxiways and aprons
- High-speed railway HS2 between London and Birmingham

Building on experience from more than one billion cubic metres of treated soil, Lhoist is a recognised technical reference in Europe and worldwide for soil treatment in road, railway and airport infrastructure.

Upgrade local soils for higher performance with Proviacal®

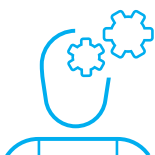
Contact our experts: info@lhoist.com

Lhoist, your partner for soil treatment

Lhoist is a global provider of lime, dolime, and mineral solutions, working hand in hand with customers to deliver reliable, high-performance results. Through strong technical expertise and field proximity, we support applications ranging from soil and water treatment to demanding industrial and environmental processes.

Lhoist - at the core of what works.

What Lhoist offers



Expertise

providing reliable and effective solutions



Products

meeting your specific needs



Services

offering customized technical assistance and logistics support



Discover more
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